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THE IBIS.

NO. I. JANUARY 1859.

I.—*On the Ornithology of Central America.* Part I. By PHILIP LUTLEY SCLATER and OSBERT SALVIN.

ALTHOUGH the birds of Central America are tolerably well known to us from the numerous travellers and collectors who have explored different parts of its shores, and supplied the museums of Europe with specimens, no writer has as yet attempted anything like a general account of the ornithology of this remarkable country, where winter visitants from the northern portion of the New World mix with others of peculiar form and splendid plumage, which recall to one's memory the most brilliant ornaments of the tropical bird-faunas of Brazil and Cayenne. A considerable number of specimens having been lately transmitted to England from Guatemala—perhaps the most attractive part of the great Central-American isthmus,—and one of the writers of the present article having himself passed some months in that country, and collected specimens and made notes upon its birds, it has been thought that the opportunity should not be lost of attempting a sketch of the ornithology of this region, in order to form a foundation upon which a more complete work may hereafter be established. It is proposed, therefore, in the present paper, to give a list, with incidental remarks, of all the species of birds which are certainly known to inhabit Central America, from the confines of Mexico to where the Isthmus again contracts in the republic of Honduras, and the route of the proposed Honduras Interoceanic Railway gives a convenient southern boundary.

B

The authorities at present existing on the ornithology of this country are but few. The birds of Southern Mexico are known to us through the researches of MM. Sallé, Botteri, and Boucard*, but none of these explorers have yet descended so far south as the Isthmus of Tchuantepc. Yucatan, which lies within our limits, was visited by Dr. Cabot, who accompanied Mr. Stephens in his second journey. Several interesting papers† on the birds of this country were the results of this expedition, but unfortunately no accurate list of the species obtained was ever published. The only account of the birds of Guatemala that we are acquainted with, besides some scattered notices of new species by Dr. Hartlaub, the Vicomte Du Bus‡, and others, is the late Prince Bonaparte's article in the P. Z. S. 1837, "On the birds collected by Col. Velasquez de Leon during a fortnight's scientific tour in Guatemala." He gives here the names of thirty-nine species, some of which were then new. But several well-known collectors have visited parts of this country, and many of their specimens are now in the Derby Museum at Liverpool and our National Collection. M. Delattre passed some time at Coban, in the Vera Paz, during one of his 'voyages,' and has given us an account § of the habits of that magnificent bird the *Pharomacrus paradiseus*, which he first observed near that city. The late Mr. Dyson (whose chief object was, I believe, to procure the Ocellated Turkey) collected also on the Bay of Honduras and obtained many fine specimens. The late Señor Don José Constancia, of La Antigua Guatemala, was a correspondent of the late Mr. H. E. Strickland, and sent him several collections of birds, some of which were figured in Sir William

* See "Catalogue of the Birds collected by M. Auguste Sallé in Southern Mexico," by P. L. Sclater, P. Z. S. 1856, p. 283; and other papers, P. Z. S. 1857, p. 81, p. 201, p. 210, and p. 226; and 1858, p. 95 and p. 294.

† See Boston Journal of Natural History, iv. p. 246, and p. 460, v. p. 90, and p. 416; and the Appendix to vol. ii. of Stephens's 'Travels in Yucatan.'

‡ See "Description de sept oiseaux de Guatemala, par le Dr. G. Hartlaub," Rev. Zool. 1844, p. 215; "Sur une nouvelle espèce du genre *Melanotis*," ibid. 1852, p. 460: Du Bus in Bull. Acad. Bruxelles and 'Esquisses Ornithologiques.'

§ See Rev. Zool. 1843, p. 163.





Jardine's 'Contributions to Ornithology*.' Mr. Joseph Leyland of Liverpool has also recently visited the Bay of Honduras for the purpose of collecting objects of natural history. Mr. Thomas Moore, of the Derby Museum, has drawn up an account of the Mammals and Birds collected by Mr. Leyland, and has kindly allowed us the use of his MS., which we hope to see published shortly. Our southern limit, the line of the proposed railway through Honduras, was traversed in 1858 by Capt. G. C. Taylor. A list of the birds obtained by him will be found in the Proceedings of the Zoological Society † for the same year, and is our only authority upon the birds of this district. Farther southwards, the ornithology of Nicaragua has been partly explored by Delattre ‡ and Sallé §, and that of Veragua by Mr. Bridges ||, M. Warseewicz ¶, and the surveying expedition under the command of Capt. Kellett. The specimens obtained from the latter source are now in the British Museum. We believe we have now mentioned nearly, if not quite, all the authorities on Central American ornithology **. Of such of these as relate to the territory within our limits we have of course availed ourselves. But we have derived most assistance from the series of bird-skins which have been lately transmitted by George Ure Skinner, Esq., from Guatemala. This gentleman, well known for the splendid Orchids †† which he has

* See Contr. Orn. pl. 17, pl. 33, &c. Some of the duplicates from these collections passed into my possession.—P. L. S.

† See P. Z. S. 1858, p. 356.

‡ See "Note sur les collections rapportées en 1853 par M. A. Delattre de son voyage en Californie et dans le Nicaragua par Charles Lucien, Prince Bonaparte," Compt. Rend. xxxvii. and xxxviii., and also separately printed.

§ The two beautiful Mammals figured in P. Z. S. 1848, pl. vi. and vii., *Mycetes palliatus*, Gray, and *Sciurus dorsalis*, Gray, were obtained by M. Sallé during this journey near Grenada in Nicaragua, and not at Caraceas, as there stated.

|| See P. Z. S. 1856, p. 138.

¶ See P. Z. S. 1850, p. 162.

** Whether Dr. Wagner and Dr. Scherzer, who have recently travelled through the Central American republics, collected any birds, we do not know, but we believe they have not yet published anything on the subject.

†† *Cattleyia skinneri*, *Barkeria skinneri*, *Lycaste skinneri*, *Odontoglossum grande*, and many other magnificent species.

imported from the same country, has lately employed collectors * in several parts of the republic, more particularly at Salamá, Cajabon, and other places in the Vera Paz; and it is to his exertions that science is indebted for the knowledge of the appropriately named *Cotinga amabilis*, for additional specimens of the wonderful *Oreophasis derbianus*, and many other ornithological rarities.

Salvin, from whose personal observation the greater part of our notes are derived, reached Belize in the middle of December 1857. After a few days' stay, he proceeded down the coast to Ysabal, on the inland lake called the Golfo Dulce, and thence by easy stages up to the city of Guatemala, collecting by the way when the opportunity presented itself. Dueñas, about thirty miles south of the capital, situated nearly between the two volcanos of Agua and Fuego, was his head-quarters during his six months' residence in the country; but he also made two excursions towards the Pacific coast, and one to the lake of Atitlan in the Altos of Guatemala. Leaving the country towards the end of June last, he returned home by the Pacific coasting steamer and Panama.

The part of Central America which we are now speaking of, being in fact a continuation of Mexico, partakes of much of the same general physical contour, and embodies three distinct faunas. The first is that of the Atlantic coast-region, or *tierra caliente*, bordering the Caribbean Sea. This varies greatly in breadth, extending nearly over the whole of the northern portion of the peninsula of Yucatan, but in other places being confined within narrow limits. It may be held to embrace all the eastern slope of the watershed up to the height of 4000 feet. Corresponding to this on the other side is the Pacific coast-region, also a *tierra caliente*, extending to about the same height above the sea-level. It differs, however, in being of a uniform narrow width of not more than 50 miles, and the descent to it from the table-land is abrupt, and is well defined by the volcanic chain which borders the western limit of the table-land. In these two coast-regions occur nearly all the tropical forms which

* We regret to hear by late accounts of the death of one of the most active of these—Rivera Paz, whose services it will be difficult to replace.



1. San Jeronimo. "Tolokok" (Cobanero)
Duenas, Escuintla, Coban, Retalulehu.

This is incorrect (cf. Iltis 1866, p 202).

are represented in the ornithology of Guatemala, but we believe that the two faunas are nevertheless quite distinct, and that the same species seldom occurs in both districts. We have not yet sufficient information to enable us to work out this subject; but we may remark, that *Meleagris ocellata*, *Cotinga amabilis*, *Ramphocelus passerinii*, *Anabates rubiginosus*, and *Galbula melanogenia*, may all be considered as species peculiar to the Atlantic coast-region; while *Buteo ghiesbreghtii*, *Ara aracanga*, and others, appear to be confined to the Pacific.

Between the two coast-regions, embracing the whole interior of the country, is the central region or table-land of Guatemala, varying in altitude from 4000 to 8000 feet, out of which rises a chain of volcanic peaks, which in some cases attain a height of nearly 14,000 feet. There are many forms peculiar to this district. In the first place, it is the winter residence of the greater part of the northern migrants, which abound here from October to the end of March. Our list will show a large number of these birds. Of the many residents peculiar to this region, we may mention as characteristic examples, *Oreophasis derbianus*, *Pharomacrus paradiseus*, *Pyrgisoma bicoloratum*, *Turdus grayii* and *T. rufitorques*, *Panoptila melanoleuca*, *Corvus cacalotl* (?), and *Erismatura rubida*. The province of Vera Paz is partly in the Central and partly in the Atlantic region, and the species collected there may consequently belong to either fauna.

Species marked (N.A.) in the following list are such as are included in the fauna of the U.S., and, with a few exceptions, may be taken to be winter visitants to Guatemala.

Ordo I. INSESSORES.

Tribus I. PASSERES*.

Subtribus I. Oscines.

Fam. I. TURDIDÆ.

1. TURDUS GRAYII, Bp. P. Z. S. 1837, p. 118.

This species is resident throughout the higher districts, but is not found lower down than at an elevation of 4000 ft. It

* We agree very much with Mr. Wallace's views (Ann. Nat. Hist. 1856), who separates the great mass of *Insessores* into three groups—*Passeres*,

breeds commonly at Dueñas in the months of April and May, making a nest of roots, fibres and small twigs with a lining of dry grass and fine roots. The eggs, three in number, are more or less covered with spots and blotches of red-brown on a ground of pale bluish green, the spots being more concentrated at the obtuse end. They measure 1 inch $2\frac{1}{2}$ lines in axis and $10\frac{1}{2}$ lines in diameter.

The song of *Turdus grayii* is very rich and of considerable compass, quite rivalling any of its congeners. It is a favourite cage-bird with the Spaniards, and enjoys the name of 'Sinzonte' in common with all other thrushes.

- ✓ 2. TURDUS LEUCAUCHEN, Sclater, P. Z. S. 1858 (Nov. 9th).
Transmitted by Mr. Skinner. In the collections of P. L. S. and Mr. Gould.
- ✓ 3. TURDUS INFUSCATUS, Lafr. Rev. Zool. 1848, p. 3.
Transmitted by Mr. Skinner. In Sir William Jardine's collection.
- ✓ 4. TURDUS RUFITORQUES, Hartl. Rev. Zool. 1844, p. 214; Du Bus, Esquisses Orn. pl. 19 et 20.
It is only in the higher parts of the Cordillera that this species is found; it occurs on the northern spur of the Volcan de Fuego, near a small village called Calderas, at an elevation of about 7000 feet. At Las Goñinas, in the Altos of Guatemala, and about the lofty hills that surround the Lake of Atitlan, it is tolerably numerous. In short, wherever the evergreen oaks attain their maximum growth, *T. rufitorques* may be found.
- ✓ 5. TURDUS MUSTELINUS (Gm.). (N. A.)
Transmitted by Mr. Skinner.
- ✓ 6. TURDUS SWAINSONI (Cab.). *Turdus olivaceus*, Brewer, Baird's Rep. p. 216. (N. A.)
Transmitted by Mr. Skinner.
- ✓ 7. CATHARUS MELPOMENE (Cab.), Sclater, P. Z. S. 1858, p. 97.
Transmitted by Mr. Skinner.

Fissirostres, and *Scansores*. The Passeres we divide, according to Müller's views, into *Oscines* and *Tracheophonæ*, the latter group passing on towards the *Fissirostres*.

2 = Jardus tristis, Siv.

Cobau (rare). Choctum &c (common). Calabon to San Luis.

3. Cobau, Cumbre above San Jeronimo (July). Quegaltonaufo (Sept.).

4. "Pajal" of V. de Fuego as high as 12,000ft. Cordillera above
Moncapam alt. 10,500ft. - Godines. Tactic. Chilesco.
Atacuango Dueñas



5. Hikok (Cobauero) Cobau, Tactic, Godines.

6. Costa grande. Feb. Cobau.

7. Bill, tarsi, feet & eyelids orange red. Dueñas, Sep. 1873.
Cobau.

8. Medio-Monte, Pacific coast. 29 Oct. 1873.
Mandible, eyelids, tarsi & toes orange. Long. tot. abg caud
4.8. -
Tulum, Rio Polochic.
9. Tulum, Rio Polochic.
10. Half Moon Cay on light house reef & N 2 cays, also
Long Cay and Middle Cay on Glover's reef.
11. Bush snake (Cobanero)
Coban
- 12 San Jeronimo. Godines. Coban.
13. Now referred to M. gilvus of S. Am. (Cf. Nomenc. p. 3.)
San Jeronimo. Dzicas, Plain of Zacaapa, upper part
of valley of the Motagua, lighthouse & Glover's reefs. Jutiapa.

- ✓ 8. MALACOCICHLA DRYAS, Gould, P. Z. S. 1854, p. 285,
pl. 97.

The Department of the Vera Paz alone seems to produce this species, of which examples were first transmitted by Mr. Skinner. (Mus. Brit.)

- ✓ 9. MALACOCICHLA MEXICANA, Bp. Compt. Rend. xliii, p. 998.

Transmitted by Mr. Skinner. Also in the Derby Museum and the collection of the Philadelphian Academy, from Coban (Delattre).

- ✓ 10. MELANOPTILA GLABRIROSTRIS, Sclater, P. Z. S. 1857,
p. 275.

Omoa, Honduras (Leyland). Mus. Brit., Derb., et P. L. S.

- ✓ 11. GALEOSCOPTES CAROLINENSIS (Linn.). *Turdus felivox*,
Vieill. (N. A.)

At Belize this bird occurs, but sparingly; it is also found in Guatemala, but is probably restricted in its range to the northern coast.

- ✓ 12. MELANOTIS HYPOLEUCUS, Hartlaub, Rev. Zool. 1852,
p. 460.

About Dueñas this Mock-bird is very common, frequenting the thick bushes and underwood. It is shy, and eludes observation by skulking rather than by open flight. Its song in February is short and disjointed, but towards the breeding season it improves in quality. The food of *M. hypoleucus* consists chiefly of berries; but, as it is also often to be observed searching about the roots of trees and amongst dead leaves, insects and their larvae may probably be included. This species forms a very slight nest, using small twigs for its construction with a lining of fine roots. The structure is usually placed in a thick bush about 9 or 10 feet from the ground. The eggs are laid about the end of May, and are three in number, rather elongated in form and uniform greenish blue in colour. They measure, axis 1 inch 2 lines, diam. $9\frac{1}{2}$ lines.

- ✓ 13. MIMUS GRACILIS, Cab. Mus. Hein. p. 83.

This bird seems to have a universal range over the whole Republic, including British Honduras. Skins from Belize and

Cf. Ili, 1866, p. 202

from Salamá, in the Department of Vera Paz, present no differences. It is a favourite eage-bird with the Spaniards. Its food is principally berries.

Fam. II. SYLVIIDÆ.

✓ 14. *SIALIA WILSONI* (Sw.). (N. A.)

“*El azulejo.*” It is only in the more open districts of the elevated region that this Blue-bird is found; in such localities, however, it is numerous.

Some Guatemala skins of this species are very pale below, on the belly quite white. Others are intermediate between this and the deep red of the more northern bird. We have not observed the same variation in Mexiean examples.

✓ 15. *REGULUS CALENDULA* (Linn.). (N. A.)

Transmitted by Mr. Skinner.

Fam. III. TROGLODYTIDÆ.

✓ 16. *CAMPYLORHYNCHUS CAPISTRATUS* (Less.). *Picolaptes capistratus*, Des Mur, Icon. Orn. pl. 63.

Often transmitted from Belize and Honduras.

✓ 17. *THRYOTHORUS RUFALBUS*, Lafr. Rev. Zool. 1845, p. 337; Sclater, P. Z. S. 1856, p. 140.

This Wren is tolerably numerous and a resident at Dueñas. It is to be found in moderately thick forest, but seems rather to seek single trees of dense foliage than thickly grown underwood.

✓ 18. *CISTOTHORUS ELEGANS*, sp. nov.

Suprà murino-brunneus, nigro transversim obsolete fasciatus; capitis antiei et intercapulii plumis nigris, striâ mediali distinetâ sordidè albâ ornatis: alis et caudâ fasciis alternis pallidè brunneis et nigris extus notatis: primiorum pogoniis internis pallidè nigrieanti-einereis: caudâ nigrâ; rectriem lateralium pogonio externo et pogonii interni parte terminali pallidè fulvis, maeulis quadratis nigris variegatis: subtùs oehraeeseenti-albidus, unicolor, gutture dilutiore, ferè albo, lateribus et criso paulò saturatiobibus: rostro superiore fuso, inferiore eum pedibus pallidè flavidis: long. tota 4·30, alæ 1·75, caudæ 1·75, rostri à rictu ·6, tarsi ·7.

14. Cordillera above Totonicapan. 10,500 ft.: Godines
duelas, San Gerónimo, Cobán, Tactic, Quezalteca a.s.o.

15 Totomicerpan ? (seen)

add Regulus satrapa, seen in the Cordillera near Los
Encuentros Feb. 1874.

16. Referred (Ibis, 1866, p. 202). to R. rufinucha. but incorrectly.
Escuintla & Maracajó. Plain of Zacapa, Savanna Grande, Retalhuleu
Acayutla, La Unión, Chimaltenango, Río Motagua (Tzopiche Grande)
17 "Chimbal" [Cobán?]. Escuintla.
Ducras, Retalhuleu.

18. Pájalo of the V. de Agua alt 11,000 ft.

5. 19 = T. intermedius, Cab. (Cf. Ibis, 1866, p. 202).
Retalhuleu, Quezaltenango & all villages. Panajachel.

5. = P. cærulea (L.) (Cf. Ibis, 1866, p. 202). San Jeronimo.
Escuintla, Coban, Savanas of Petén, Retalhuleu.

22 "Ahsatil" of the Coban Indians.
Duenas, Coban, Escuintla. Savana grande.

A single specimen only was shot by Salvin amongst the rushes on the banks of the lake of Dueñas, where it appeared to be scarce.

This apparently hitherto unnoticed Wren rather resembles the N. American *Cistothorus brevirostris*, but is much larger in dimensions and more distinctly marked.

✓ ✓ 19. **TROGLODYTES AEDON** (Vieill.). (N. A.)

Undoubted examples of this bird have been transmitted by Mr. Skinner; but it is uncertain whether this agrees with the common wren at Dueñas, specimens of which were not collected.

Fam. IV. ALAUDIDÆ.

✓ 20. **ANTHUS LUDOVICIANUS** (Gm.). (N. A.)

A small flock of about twelve were seen in the open land near Dueñas, about the middle of February. They were apparently on passage, and did not remain.

Fam. V. PARIDÆ.

Subfam. POLIOPTILINÆ.

✓ ✓ 21. **POLIOPTILA MEXICANA** (Bp.). *Culicivora mexicana*, Bp. Conspl. p. 316?

This bird is not uncommon at Dueñas, frequenting low bushy trees. It seems to extend its range through a great variety of temperature, as a single individual was seen in the month of February 14,000 feet above the level of the sea, on the summit of the Volcan de Agua. It does not remain to breed.

Specimens from Guatemala agree with those collected by M. Sallé in the State of Vera Cruz. They are much more uniform than *P. cærulea* of N. America, and have no appearance of a frontal band in either sex. It is not yet certain whether they are anything more than *P. cærulea* in winter plumage.

Fam. VI. MNIOTILTIDÆ.

Subfam. SIURINÆ.

✓ 22. **SIURUS AURICAPILLUS** (Gm.). (N. A.)

Numerous examples of this species have been forwarded

through Mr. Skinner from the Vera Paz. It occurs but very sparingly at Dueñas in the month of February.

✓ 23. **SIURUS NOVEBORACENSIS** (Gm.). (N. A.)

Just outside the town of Belize, and beyond that part called Yarborough, this is a very common bird in the month of December.

Subfam. **MNIOTILTINÆ.**

✓ 24. **MINOTILTA VARIA** (Linn.). (N. A.)

At Belize, as well as throughout the more elevated portions of Guatemala, this bird is found; it seems to be pretty equally and generally spread over the whole country. It is migratory at Dueñas, leaving that district in the spring.

✓ 25. **PARULA AMERICANA** (Linn.). (N. A.)

Transmitted by Mr. Skinner.

✓ 26. **PARULA SUPERCILIOSA** (Hartl.). *Conirostrum superciliosum*,
Hartl. Rev. Zool. 1844, p. 215; Selater, P. Z. S. 1858, p. 299.

Originally described from Guatemalan specimens by Dr. Hartlaub.

✓ 27. **GEOTHLYPIS TRICHAS** (Linn.). (N. A.)

This is perhaps the commonest species of the *Mniotiltidae* about Dueñas, but like all the rest is migratory. It is usually to be found in the neighbourhood of water, and frequents the reeds surrounding the Lake of Dueñas, and the bushes on the banks of its outlet to the River Guacalate.

✓ 28. **GEOTHLYPIS MACGILLIVRAYII** (Aud.). *Sylvia tolmei*,
Townsend. (N. A.)

Throughout the district lying between the Volcanos of Agua and Fuego this species is by no means uncommon, frequenting the outskirts of the forest and the edges of the clearings. The distinctive marks over and under the eye, by which *G. macgillivrayii* is distinguished from *G. philadelphica*, are very apparent in a living or freshly-shot bird.

✓ 29. **OPORORNIS FORMOSA** (Wilson); Baird, Report, p. 247.
(N. A.)

Transmitted by Mr. Skinner.

23. San Geronimo. "Tzikmam" Coban Indians.
Retalhuleu, Dueñas, Coban, Patio Bolas.
24. San Geronimo. Escuintla. Patio Bolas, Retalhuleu,
Dueñas, Coban, Choctum
25. Coban
26. Common in P. de Huegoimpost. (Alt. 6-8000ft.). Sp. 1873.
Ridge above Chuaus Feb. 1874. Quezaltenango. Cumbre above
P. Geronimo, Sta Barbara,
27. Escuintla, Dueñas, San Geronimo, Coban,
Retalhuleu, Chiapas.
28. Dueñas.
29. Dueñas, Coban, Choctum.

30. Dueñas Coban

31. Coban, Retalhuleu.

32 San Geronimo. "Bok" (Cobanero) Tzoktzik being the term
for the Mniostiltidae generally. Coban, Tactic.

33. Upper Pine forests of V. de Fuego alt. 10-12000 ft.
Coban.

34. San Geronimo. Escuintla. Dueñas.

35. Dueñas, Coban.

37. Dueñas, Coban, Retalhuleu, San Geronimo. La Union.

38. Dueñas, Coban, Retalhuleu.

39. Dueñas, Coban, Choctum, Retalhuleu

40. San Geronimo, Dueñas, Coban

41 Dueñas, Coban,

- ✓ 30. *HELMITHERUS VERMIVORUS* (Lath.); Baird, Rep. p. 252.
(N. A.)
Transmitted by Mr. Skinner.
- ✓ 31. *HELMINTHOPHAGA PINUS* (Linn.); Baird, Rep. p. 254.
(N. A.)
Transmitted by Mr. Skinner.
- ✓ 32. *DENDROICA VIRENS* (Gm.). (N. A.)
This species occurs but sparingly at Dueñas, where it is a winter visitant. Specimens also have been transmitted by Mr. Skinner and by Señor Constaneia.
- ✓ 33. *DENDROICA TOWNSENDII*, Baird, Rep. p. 269. (N. A.)
D. townsendii is also a winter visitant at Dueñas, and though more frequently met with than *D. virens*, is by no means abundant.
- ✓ 34. *DENDROICA CORONATA* (Linn.). (N. A.)
This bird frequents the more open districts about Dueñas, preferring scattered bushes to the denser underwood. It is an abundant species, especially between Dueñas and the village of Alotenango, in the winter season.
- ✓ 35. *DENDROICA BLACKBURNIÆ* (Gm.). (N. A.)
Transmitted by Mr. Skinner and Señor Constaneia.
- ✓ 36. *DENDROICA CASTANEA* (Wilson). (N. A.)
- ✓ 37. *DENDROICA ÆSTIVA* (Gm.). (N. A.)
- ✓ 38. *DENDROICA MACULOSA* (Gm.). (N. A.)
Specimens of all these three Wood-warblers have been transmitted by Mr. Skinner.
- ✓ 39. *MYIODIOTES MITRATUS* (Gm.). (N. A.)
Transmitted by Mr. Skinner. Also collected by Capt. Taylor near Comayagua (see P. Z. S. 1858, p. 358).
- ✓ 40. *MYIODIOTES PUSILLUS* (Wils.). (N. A.)
A common migratory species at Dueñas, where it is only found during the winter season.
- ✓ 41. *MYIODIOTES CANADENSIS* (Linn.). (N. A.)
Transmitted by Mr. Skinner.

- ✓ 42. *SETOPHAGA RUTICILLA* (Linn.). (N. A.)
At Belize this species occurs in the winter.
- ✓ 43. *SETOPHAGA PICTA* (Sw.).
Transmitted by Mr. Skinner.
- ✓ 44. *SETOPHAGA FLAMMEA*, Kaup, P. Z. S. 1851, p. 49. *S. intermedia*, Hartl. R. Z. 1852, p. 5.
Transmitted by Mr. Skinner and Señor Constancia. Distinct from the Mexican *Setophaga miniata*. The specimen from Guatemala described in Baird's Report (p. 299) without doubt belongs here.

Fam. VII. VIREONIDÆ:

Subfam. ICTERIINÆ.

- ✓ 45. *ICTERIA VELASQUEZI*, Bp. P. Z. S. 1837, p. 117.
We rather doubt the distinctness of the southern specimens of *Icteria* from those of the United States (*I. polyglotta* and *I. longicauda*), and believe they may be referred to the winter dress of the latter.

Subfam. VIREONINÆ.

- ✓ 46. *VIREOSYLVIA OLIVACEA* (Linn.); Baird's Rep. p. 329. (N. A.)
Transmitted by Mr. Skinner.
- ✓ 47. *VIREOSYLVIA FLAVO-VIRIDIS*, Cassin, Pr. Ac. Sc. Philad. (1851) v. p. 152, pl. 11; Baird, Rep. p. 332.
In coll. P. L. S., received from Don José Constancia.
- ✓ 48. *VIREOSYLVIA PHILADELPHICA*, Cassin, Pr. Ac. Sc. Philad. v. p. 153, pl. 10, fig. 2; Baird, Rep. p. 335. (N. A.)
In coll. O. S. received from Mr. Skinner.
- ✓ 49. *VIREO FLAVIFRONS*, Vieill.; Baird, Rep. p. 341. (N. A.)
Transmitted by Mr. Skinner.
- ✓ 50. *VIREOLANIUS PULCHELLUS*, sp. nov.
Lætè psittaceo-viridis: pileo eyaneo: gutture flavo: formâ et saturâ *Vireolanii icterophryos*.

A single specimen of this beautiful bird is in the British Museum, received from Mr. Skinner through Mr. Gould.

42 San Jerónimo. Dueñas, Coban, Totonicapan, Retalhuleu
Acajusla.

43. Common in V. de Fuego as high as 8500ft. - Chilasco.
Ridge near Chol. Mar. 1874. San Jerónimo, Sta Barbara.

44. "Chupilchok" (Cobrueso) Quezaltenango, Coban,
Dueñas & V. de Fuego. Carrizal. Chilasco.

45 = I. virens (L.) (cf. Iris, 1866, p. 202.)
Valley of the Polochic, Retalhuleu, Savana grande.

46. Coban, Dueñas, Retalhuleu.

48. Coban, Retalhuleu.

49. V. de Fuego (Caldeno) alt. 7300ft. Coban, Retalhuleu,
San José. San Jerónimo Dueñas.

50. Choctum; mountains of Rasché, Savana grande.

51. V.de Fuego Sep: 1873. Dueñas, Coban.

52. Very common about Dueñas Sep: 1873. San Jerónimo,
Yabal.

53. San Jerónimo, Dueñas.

54. San Jerónimo, Dueñas,

55. Acetano (Alt. 5800 ft.); Ridge above Barrinas alt. 6700 ft, and
Calderas V.de Fuego Alt. 7300 ft. Aug: & Sep: 1873. Barranca
de los Chocoyos Feb: 1874. Villa lobos. Coban. ^{sus alluvia} Quiche, Totonicapan
56. Rio Dulce: San Jerónimo: "Guilish" (Cobauer). Retalhuleu.
Coyán, San José.

57 = P. liucogastra, Baird (Cf. Ibis, 1866, p. 203) but really
referable to P. chalybea (Gm.) (Monogr. p. .)
Escuintla. Belize San Jerónimo, Guatemala, Dueñas
Retalhuleu, Petén, Acajutla, La Unión. Cuyabon. -

58. Ridges above Misco Jan 1874. Escuintla. San Juan Sacat-
-ques San Jerónimo, Coban, Dueñas, Petén.

59. Ridge, above Totonicapan alt. 10,500 ft. Feb: 1874.
Dueñas V.de Agua & de Fuego

- ✓ 51. CYCLORHIS FLAVIVENTRIS, Laf. Rev. Zool. 1842, p. 133.
Transmitted by Señor Constaneia and Mr. Skinner.

Fam. VIII. HIRUNDINIDÆ.

- ✓ 52. HIRUNDO HORREORUM, Barton; Baird, Rep. p. 308. (N. A.)
This species, or one very closely resembling it, was observed
by Salvin near Dueñas, in April 1858.

- ✓ 53. PETROCHELIDON BICOLOR (Vieill.). (N. A.)
Transmitted by Mr. Skinner. In Mr. Gould's collection.

- ✓ 54. PETROCHELIDON THALASSINA, Sw. Phil. Mag. 1827, p. 365.
(N. A.)

Early in March great numbers of this beautiful species occur
near Dueñas, where they remain but for a short time; during
that time they are to be found flying over the open land to the
south of the lake.

- ✓ 55. ATTICORA PILEATA, Gould, P. Z. S. 1858, p. 355.
Transmitted by Mr. Skinner.

- ✓ 56. COTYLE SERRIPENNIS (Aud.). (N. A.)

In a gorge on the River Guaealate this Swallow is especially
abundant, but it is also found elsewhere about Dueñas. Greater
numbers appear in the winter months, but a few are to be found
all through the year.

- ✓ ✓ 57. PROgne DOMINICENSIS (Gm.).

A skin, transmitted by Mr. Skinner, seems to agree most
nearly with this species.

Fam. IX. AMPELIDÆ.

Subfam. AMPELINÆ.

- ✓ 58. AMPELIS CEDRORUM, Vieill. (N. A.)

Transmitted by Mr. Skinner, and said to be an occasionally
abundant winter visitant. *Bombycilla mariae*, Coinde (Grenoble,
1857), seems to be nothing more than this bird.

Subfam. PTILOGONYDINÆ.

- ✓ 59. PTILOGONYS CINEREUS (Sw.).

Transmitted by Señor Constaneia to the late Mr. Strickland;
and also in Mr. Skinner's series.

60. **MYIADESTES OBSCURUS**, Lafr.

Every wooded ravine in the elevated region resounds with the strange song of this bird, which, from its remarkable character, has procured for the songster the title of '*Guarda barranca*'. The notes have a metallic ringing in their tone, and though peculiar, are extremely soft in their cadence. It is a bird that, of all others, when once heard and known, associates itself with all that is beautiful in the grand mountain-scenery of Guatemala. Deservedly this is a favourite cage-bird with the Spanish ladies, and few houses are without it.

Fam. X. CÆREBIDÆ.

61. **CÆREBA LUCIDA**, sp. nov.

Affinis *C. cœruleæ* ex Cayennâ, et rostro simillimo, sed colore cœruleo-viridescente, gulâ media usque ad pectus nigrâ, alis et tarsis longioribus distinguendâ. Long. alæ 2·4.

Numerous specimens transmitted by Mr. Skinner seem to agree in the above distinctions.

62. **CHLOROPHANES ATRICAPILLA**, Vieill. ?

Transmitted by Mr. Skinner. We have not yet had an opportunity of comparing this with southern specimens.

63. **DIGLOSSA BARITULA**, Wagl. Isis, 1832, p. 281; Gray & Mitch. Gen. pl. 42.

Transmitted by Señor Constancia and Mr. Skinner.

Fam. XI. TANAGRIDÆ.

64. **SALTATOR ATRICEPS** (Less.). *Arremon giganteus*, Bp. P. Z. S. 1837, p. 117; Sclater, P. Z. S. 1858, p. 358. *Pyrrhula raptor*, Cabot.

Comayagua, Honduras (*Taylor*): common in Yucatan (*Cabot*).

65. **SALTATOR MAGNOIDES** (Lafr.).

Transmitted by Mr. Skinner.

66. **SALTATOR GRANDIS** (Licht.); Sclater, P. Z. S. 1856, p. 72.

Transmitted by Mr. Skinner in the state described as adult. Specimens procured at Dueñas are all in the stage described by Lafresnaye as *S. icterophrys*, and may perhaps, after all, turn out to be distinct. It is there not uncommon, frequenting the

60. Iris dark brown; bill black; feet & claws pale hazl. Length abg: cauda 4.8. 12 Sep. 1873. Gr. 2x Calderas.

Slopes of the Cerro de Lluvia (Las Nubes) 4,500 ft.

Duenas, San Jeronimo, Tactic, Quetzaltenango.

61 Choctum.

v. = C. guatemalensis, Sch. (cf. Ibis 1866, p. 203) vix distinctus.
choctum. Kampanak.

63. Calderas, V. de Fuego. Sep. 1873. Santa Barbara, Coban,
Quetzaltenango. V. de agua.

64. Savana grande. Sep. 1873. Yzabal; Santa Lucia & all
along the road to San Agustin Feb. 1874. Choctum.
Retalhuleu. Coban. Mirandilla.

64 "Tzik-tzik." (Cobanero). ~~stone~~, Choctum.

65 "Zit-zet" (Cobanero) Coban, Choctum.

66. Escuintla. Duenas, Savana grande, Retalhuleu.

67. V. de Fuego

68. Calderas, V. de Fuego (8300 ft.). Sep. 1873. Cobaw.

69. Choctum, Kampanak.

70. Very common in the "Costa grande"!
Escuinilla, Retalhuleu. Choctum &c. -

71. San Gerónimo. "Mayor-tzik" (Cobauero)
Iguana, Dueñas, Coban, Retalhuleu. mouth of R. Due.
San Gerónimo.

72. San Gerónimo. Pine ridge of Poctún.

73. Dueñas. -

74. Savana grande, Sep. 1873. Slopes of V. de Atitlán. Escuinilla
"Chupceesh", of the Coban Indians. Santa Lucía, Retalhuleu.
Mts. of Rasché.

thick bushy underwood. Its food consists principally of small fruits and berries.

- ✓ 67. BUARREMON BRUNNEINUCHUS (Lafr.).
Transmitted by Mr. Skinner.
- ✓ 68. BUARREMON CHRYSOPOGON, Bp., Scaler, P. Z. S. 1856,
p. 86.
Transmitted by Mr. Skinner, showing that the locality given
in the Paris Museum (California) is wrong.
- ✓ 69. LANIO AURANTIUS, Lafr. Rev. Zool. 1846, p. 204.
Procured in Honduras by Dyson. Mus. Brit.
- ✓ 70. PHœNICOTHRÄUPIS RUBICOIDES (Lafr.).
Transmitted by Señor Constancia and by Mr. Skinner.
- ✓ 71. PYRANGA AESTIVA (Gm.). (N.A.)
This bird enjoys an almost universal range throughout the
Republic of Guatemala. It occurs in December, at the mouth
of the Rio Dulce, in the pine-ridges near Quirigua, and in fact
along the whole road from the port of Izabal to the city of
Guatemala, a distance of about 80 leagues. At Dueñas *P.
aestiva* is common, occurring during the winter months.
- ✓ 72. PYRANGA HEPATICA (Sw.); Scaler, P. Z. S. 1856, p. 24.
Transmitted by Mr. Skinner.
- ✓ 73. PYRANGA LUDOVICIANA (Wilson). (N. A.)
P. ludoviciana occurs near the village of Alotenango, situated
between the Volcanos of Agua and Fuego, at an elevation of
about 5000 feet, but is anything but a common species. Speci-
mens also have been sent from the Vera Paz.
- ✓ 74. PYRANGA ERYTHROMELÆNA (Licht.).
P. erythromelæna is common on the Pacific coast in the month
of March, and occurs abundantly near Santa Lucia, a village
distant about 12 leagues from Escuintla. It is also found in
the Vera Paz.
- ✓ 75. PYRANGA ROSEOGULARIS, Cabot, Bost. Journ. Nat. Hist.
v. p. 416; Scaler, P. Z. S. 1857, p. 6.
Discovered in Yucatan by Dr. Cabot.

- ✓ 76. RAMPHOCELUS PASSE RINII, Bp.; Selater, P. Z. S. 1856,
p. 130.

It is on the eastern sea-board, and not on the southern slope of the Cordillera, that *R. passerinii* occurs. At Izabal, the port of Guatemala, on the Gulf of Dulee, it is tolerably numerous. Skins also have been sent from Cajabon in the Department of the Vera Paz. This bird is readily distinguishable from the New Grenadian *R. flammigerus* by its smaller size.

- ✓ 77. RAMPHOCELUS SANGUINOLENTUS (Less.), Cent. Zool.
pl. 39.

This magnificent species is found on the hot sea-board of the Bay of Honduras. Mr. Dyson obtained specimens on the Chamaliean River.

- ✓ 78. TANAGRA DIACONUS (Less.).
Transmitted by Señor Constancia.

- ✓ 79. TANAGRA VICARIUS (Less.), Cent. Zool. pl. 68 (1830).
Tanagra abbas, Lieht. Preis-Verz. 1831.

This Tanager is resident, but not very numerous, at Dueñas. It has also been sent from the Vera Paz. In the month of May it builds a compact nest, composed of small twigs with a little wool, and lined with a few pieces of dead flag, fine roots, and horsehair. The nest, usually in a cypress or other thick-growing tree, is placed on the upper part of a branch, and about ten or twelve feet from the ground. The eggs, three in number, are spotted or blotched with three shades of reddish brown on a pale bluish-grey ground. Axis 10½ lines, diam. 8 lines.

- ✓ 80. CALLISTE LARVATA, Du Bus.

Procured by the late Mr. Dyson during his voyage up the Chamaliean River, but appears to be scarce.

- ✓ 81. EUPHONIA ELEGANTISSIMA (Bp.). *Pipra elegantissima*,
Bp. P. Z. S. 1837, p. 112.

Procured in Guatemala by Col. Velasquez de Leon.

- ✓ 82. EUPHONIA AFFINIS (Less.), Selater, P. Z. S. 1856, p. 274.

- ✓ 83. EUPHONIA HIRUNDINACEA, Bp. P. L. S. 1837, p. 117;
Selater, P. Z. S. 1856, p. 278.

76. Choctum, & Belize River, Yzabal.

77. Yzabal. Choctum, Cahabon, Belize river.

78. Yzabal. Escuintla. Santa Lucia, Sacas (rare)
choctum, Lanquin, Retalhuleu.

79. Coban, Patio Nolas, Retalhuleu.

* Add Calliste cabanisi, Sel. Costa Rica Berlin Mus: ex Dr.
Bernoulli Vide Ibis.

80. yzabal, Choctum. -

81. Nest S. lucas above Antigua. Calderas. Santa Barbara
Cuyotenango, Choctum

82. Escuintla. Sacas, Retalhuleu

83. Choctum, Cahabon, Poctum.

84 Choctum.

85 "Koy-moot" (of Indians of Coban) Coban. Choctum.

86. "Pammah" of Coban Indians. Dueñas, Coban, San Jeronimo
Retalhuleu.

87 Petén, San Jeronimo. Retalhuleu.

88. Escuintla. Plain of Salina, Choctum. Retalhuleu.
Dueñas

89. Escuintla or road to Sta Lucia Cosamalguapa.
Huamachal. Tzalamán. San Jeronimo, Dueñas,
Coban.

The specimens whence Prince Bonaparte took his description were procured in Guatemala by Col. Velasquez de Leon: Señor Constancia has also transmitted examples.

84. *EUPHONIA GOULDI*, Selater, P. Z. S. 1857, p. 66. pl. 124.
Transmitted by Mr. Skinner.

85. *CHLOROPHONIA OCCIPITALIS* (Du Bus), Selater, P. Z. S. 1856, p. 270.

Transmitted by Mr. Skinner. In Sir William Jardine's collection.

Fam. XII. FRINGILLIDÆ.

86. *HEDYMELES LUDOVICIANUS*, Linn. (N. A.)

It would appear that this bird is abundant in the Vera Paz, as numbers of skins have been transmitted by Mr. Skinner. It does not occur at Dueñas, but is a common cage-bird in the city of Guatemala.

87. *SPERMOPHILA MORELETII*, Bp. Conspl. p. 497.

This bird was originally discovered near the lake of Peten by M. Morelet, and was described from his specimens in the Paris Museum by Prince Bonaparte. It is not an uncommon species about Dueñas, where it is generally to be found amongst the tall reeds on the edge of the lake. It occurs also at Belize.

88. *VOLATINIA JACARINA* (Linn.), Selater, P. Z. S. 1856, p. 305.

Transmitted by Señor Constancia. Whether this is the true *jacarina* must remain doubtful, until the several species confounded under that name are worked out. The present bird has white feathers on the bend of the wings above, and the under-coverts black.

89. *CYANOSPIZA CIRIS* (Linn.); Baird, Rep. p. 503. (N. A.)

Though of rather unfrequent occurrence at Dueñas, this bird is abundant on the Pacific coast, evidently preferring the hot to the more temperate districts. Capt. Taylor procured a specimen at Comayagua, in the centre of the State of Honduras. See P. Z. S. 1857, p. 358.

90. *CYANOSPIZA VERSICOLOR* (Bp.).

Transmitted by Mr. Skinner. Mus. Brit.

✓ 91. CYANOSPIZA CYANEA (Linn.). (N. A.)

This is a winter visitant at Dueñas, where it cannot be said to be abundant. Mr. Skinner having transmitted many skins, it may be supposed to occur more frequently in other parts.

✓ 92. ZONOTRICHIA PILEATA (Bodd.). *Z. matutina*, auct.

Quite an abundant species and resident at Dueñas and on the plain of Antigua Guatemala, where it may constantly be seen about the 'nopal' (*Cactus cochinellifer*) in the cochineal plantations, and the mud walls surrounding them. The bird builds a nest outwardly of strong grass roots and small twigs, and inwardly of horse-hair. The eggs, two in number, are spotted or blotched with deep red on a pale bluish-green ground. They measure, axis 10 lines, diam. $7\frac{1}{2}$ lines.

✓ 93. PASSERCULUS LINCOLNI (Aud.).

This species was found about the reeds on the margin of the lake in February, but it is not common.

✓ 94. PYRGISOMA BIARCUATUM (Lafr.), Voy. Venus, Ois. pl. 6; Bp. Conspl. p. 486. *Atlapetes rubricatus*, Cab. Mus. Hein. p. 140.

This species is not uncommon about Dueñas, and is resident. It frequents the thick underwood, but is generally found near the more open and cultivated districts. It builds a very deep nest composed of dead leaves and sticks, with a few horse-hairs inside. This structure is placed in a low bush about 5 or 6 feet from the ground. The eggs, two in number, are closely but distinctly spotted with red on a ground of creamy white; they measure, axis 1 inch, diam. $8\frac{1}{4}$ lines. It seems very doubtful whether the genus *Pyrgisoma* can be held to be really distinct from Wagler's *Atlapetes*.

✓ 95. COTURNICULUS PASSERINUS (Wilson). (N. A.)
Transmitted by Señor Constancia and Mr. Skinner.

✓ 96. HÆMOPHILA RUFESCENS (Sw.).
Transmitted by Mr. Skinner. Mus. Brit.

✓ 97. EUSPIZA AMERICANA (Gm.). (N. A.)
Transmitted by Mr. Skinner.

91. San Geronimo. "Chion" (Cobanero). Escuintla.
Coban. Retalhuleu. La Union.

92. Quetzaltenango & throughout the Altos of Guatemala
8,000 to 10,000 ft. Jan' & Feb. 1874. Guatemala July.
Dueñas. Coban

ad ~~Passerulus alaudinus~~ (Coban, Petén, Retalhuleu).

93. "Borsin" (Cobanero) Coban, Dueñas.

94. Escuintla. Dueñas, Retalhuleu. Coban.

94.5. A distinct species! "Izentziquel" (Cobanero)

95. Coban

96. Carigal. San Geronimo. ~~Carigal~~. Dueñas
Quetzaltenango.

97. V. de Agua above San Diego, Retalhuleu, Huamuchil

98. Coban, San Jeronimo, Dueñas

99. Dueñas, San Jeronimo.

100 Petén, Coban.

S. = S. ludoviciana (L.) (cf. Ibis, 1886, p. 203).
Dueñas, Savanas of Petén.

102. Choctum, Brack b Petén, Yzabal, Iguana.

103. Choctum, Lanquin, ~~Yzabal, Brack b Petén.~~

104. Yzabal, - Escuintla, Dueñas, Choctum, Retalhuleu,
Huamuchal.

105. San Jeronimo, Savana grande, Zacapa, Retalhuleu
Acajutla.

- ✓ 98. **COCOTHIRAUSTES ABEILLII** (Less.). *Guiraca abeillii*, Less.
Rev. Zool. 1839, p. 41.

Mr. Gould has received an example of this beautiful bird from Mr. Skinner.

- ✓ 99. **CHRYSOMITRIS MEXICANA** (Sw.).
Transmitted by Señor Constancia to Mr. Strickland. In coll.
P. L. S.

Fam. XIII. ICTERIDÆ.

Subfam. AGELÆINÆ.

- ✓ 100. **AGELÆUS PHÆNICEUS** (Linn.).

The females of this species congregate in large flocks near the lake of Dueñas, feeding about the swampy grass on the edge of the water. The males are always separate, and generally to be seen on a single twig of a bush or low tree, uttering their monotonous ery. At Dueñas they are resident all the year round, and build in the reeds that surround the lake, deferring the period of incubation till the month of June.

- ✓ 101. **STURNELLA HIPPOCREPIS**, Wagl. (?)

Not only at Dueñas, where it is common about the open land, but through all the open plains of the higher region, is this bird found. At the former place it is most abundant in the winter months, but some few pairs remain to breed.

Subfam. ICTERINÆ.

- ✓ 102. **CACICUS MONTEZUMÆ** (Less.) Cent. Zool. pl. 7.

Procured by Capt. Taylor at Taulevi, Honduras: seen once at Iguana near Izabal, in the Atlantic coast-region.

- ✓ 103. **OXYALUS WAGLERI**, Gray and Mitch. Gen. of B. pl. 8.
Transmitted by Mr. Skinner from Cajabon, Vera Paz.

- ✓ 104. **CASSICULUS PREVOSTI** (Less.).

Oecurs sparingly at Dueñas. Is generally seen in the thick trees, where it seems to employ itself in breaking the dead twigs, and so attracts attention by the sound.

- ✓ 105. **ICTERUS GULARIS** (Wagl.).

Transmitted by Mr. Skinner from the Vera Paz, and collected

by Capt. Taylor near Comayagua, Honduras (P. Z. S. 1858, p. 358).

- ✓ 106. *ICTERUS PECTORALIS* (Wagl.).
Also from the Vera Paz (Mr. Skinner).
- ✓ 107. *ICTERUS GIRAUDI*, Cassin.
Confer P. Z. S. 1857, p. 227. Transmitted by Mr. Skinner.
- ✓ 108. *ICTERUS CUCULLATUS* (Sw.).
A single specimen, apparently referable to this species, was shot in December at Belize, where it is known by the name of the "Banana-bird," a title doubtless common to all the genus. It differs from Mexican specimens in having the black extending above and behind the eye, and it will be necessary to make further comparisons.
- ✓ 109. *ICTERUS WAGLERI*, Sclater, P. Z. S. 1857, p. 7.
This is the only one of the genus found about Dueñas, where it is not uncommon.
- ✓ 110. *ICTERUS PROSTHEMELAS*, Strickland, Contr. Orn. 1850, p. 120, pl. 62.
A close ally of the preceding. Transmitted by Mr. Skinner.
- ✓ 111. *ICTERUS BALTIMORENSIS* (Linn.), Bp. P. Z. S. 1837, p. 116.
Transmitted from the Vera Paz by Mr. Skinner.
- ✓ 112. *ICTERUS AFFINIS*, Lawrence.
This small variety of the Orchard Oriole has been transmitted by Mr. Skinner. Prof. Baird does not consider it truly distinct from *I. spurius*.
- ✓ 113. *QUISCALUS MACRURUS* (Sw.).
This species plays the part of the sparrow in Guatemala, and seeks the abode of man as that familiar bird does in Europe. It frequents the larger towns as well as the villages. Its favourite resort is the stable, where it scratches for its food among the ordure of the horses; sometimes perching on the backs of these animals and ridding them of their ticks; and now and then flying on to the manger and picking up stray grains of maize. It breeds in societies at Dueñas, selecting the willows that grow near the lake and the reeds on its banks for its nests.

106. Savana grande, Sip. 1873; San Geronimo. Escuintla.
Retalhuleu, San Jose, Acajutla.
107. San Antonio Macoil: Oct. & valley of Rio grande: Feb.
Dueñas, Trapiche grande, Coban.
- 108 Belize.
109. San Geronimo, Dueñas & V. de Fuego.
110. Coban
111. "Yuyum" of Coban Indians., Coban, S. Geronimo, Dueñas.
Retalhuleu.
- 112 = I. spurius, Linn.: San Geronimo. Common throughout
the Costa grande Jan: & Feb. 1874. Escuintla. Coban
Retalhuleu, San Jose.
113. San Geronimo. "Tzot" (Cobanero). Escuintla, & S. José.
Everywhere about houses or villages

114. Ridge above Calderas (8300 ft.); V. de Fuego (12000 ft.). San Geronimo.
V. de Atitlán, Izquierdo, etc. — Salamá, Zacapa,
Guatánas.
115. Seen Sep. 1873 as high as 8300 ft. in the V. de Fuego.
San Geronimo. "Rashchashék" [Cobanera] Coban, Tauste,
Santa María on road to Retalhuleu.
116. Coban.
117. Calderas, V. de Fuego (7-8000 ft.). Mar. 1874 Saw a specimen
in a well made near S. Pedro Carcha, Las Flores (constans)

The breeding season seems to extend over some length of time, and in the month of May young birds and fresh eggs may be found in nests in the same tree. On the coast, young ones nearly capable of flying were seen in the early part of March. The nest is usually made of grass and placed among thin upright branches, the grass being entwined round each twig to support the structure. The number of eggs seldom exceeds three; they are curiously marked with black spots on a bluish-grey ground. They measure, axis 1 inch 4 lines, diam. $11\frac{1}{2}$ lines.

Capt. Taylor procured specimens of this bird near Comayagua.

Fam. XIV. CORVIDÆ.

Subfam. CORVINÆ.

114. *CORVUS CACALOTL*, Wagler: Bp. P.Z.S. 1837, p. 115?

A true Raven occurs tolerably abundantly about the plains of Chimaltenango, at an altitude of 6000 feet. It sometimes descends to Dueñas, but rarely. It was also once observed near the village of Estanzuelas, on the entrance to the plain of Zacaapa. Specimens have not yet been obtained, and it is only doubtfully referred, following Bonaparte, to *Corvus cacalotl* of Wagler.

115. *CYANOCITTA MELANOCYANEA*, Hartlaub, Rev. Zool. 1844, p. 215; Bp. Consp. p. 378.

Throughout the wooded parts near Dueñas this Jay is common, and the only species. It is resident all the year, breeding in the months of April and May. It makes a loose nest of small twigs, and lays four eggs of a brick-red colour, spotted and blotched with a darker shade of the same. They measure, axis 1 inch 3 lines, diam. $10\frac{1}{2}$ lines.

116. *CYANOCITTA ORNATA* (Less.).

Transmitted by Mr. Skinner's collector from Cajabon. Also extends to Honduras.

117. *CYANOCITTA PUMILO*, Strickl. Contr. Orn. 1849, p. 122, pl. 33; Bp. Consp. p. 378.

Originally described from specimens transmitted by Señor Constancia. It is perfectly distinct from the Mexican *Cyanocitta nana*. See P. Z. S. 1857, p. 204.

✓ 118. CYANOCORAX GUATEMALENSIS, Bp. Consp. p. 380.

Also from Cajabon and Honduras.

✓ 119. CYANURUS CORONATUS (Sw.). *Garrulus coronatus*, Sw.

Phil. Mag. 1827, p. 437; Selater, P. Z. S. 1858, p. 359.

Transmitted by Señor Constância. Observed in the barranco of Los Choeoyos, in the Altos of Guatemala.

✓ 120. CALOCITTA FORMOSA (Sw.). *Cyanurus bullockii*, Bp. P. Z. S. 1837, p. 115.

Found abundantly on both the Atlantic and Pacific coast-regions, but never ascends to the central region.

✓ 121. PSILORHINUS MORIO (Wagl.).

Occurs on the eastern coast between Quirigua and Iguana, on the road to Guatemala.

[To be continued.]

~~H.—Notes on Birds observed in Southern Palestine, in the months of March and April 1858. By the Rev. H. B. TRISTRAM, F.L.S.~~

~~THERE is, perhaps, no country frequented by travellers whose Fauna is so little known as that of Palestine. This may arise partly from the more absorbing associations of sacred and historical interest, which are of themselves more than sufficient to occupy the attention during the short period usually allotted to a tour in Palestine; and partly from the extreme difficulty and even danger of pursuing researches in a region so unsettled and lawless.~~

~~The following list makes no pretension to anything like completeness, as ornithology was by no means the principal object of the writer's expedition, and the districts most abounding in birds, as the Lebanon, the upper waters of the Jordan, and the wooded regions of Northern Palestine, were not visited by him at all.~~

~~It is put forth rather in the hope that the fact of so many rare and interesting species having been observed in so short a time, may induce succeeding travellers to endeavour to supply~~

118. Yzabal, Zapote, Patio Bolas, Retalhuleu
Choctum.

119. Calderas, Vde Fuego 6-8000 ft. Chilasco.

San Raymundo, above Mixco, Santa Barbara
Totonicapan.

120. Pavaña Grande. Sep. 1873. Long. tot. along cauda 9.3 —
very common throughout the Costa Grande Jan & Feb 1874
Río grande Valley below Chol. Mar 1874. Escuinilla. Zacapa
Chucos, Retalhuleu.

121. Yzabal, Choctum, Telemán, Quirigua

S. 122 = Antromolus ruf. V. de Fuego. alt. 7000 ft. Sip: 1873.
Savanna grande, Tacitec, Choctum.

123. Escuindla. Retalhuleu. Choctum.

S. 124 This note really refers to P. compressus, Lab. Escuindla.

THE IBIS.

No. II. APRIL 1859.

XII.—*On the Ornithology of Central America.* Part II. By
PHILIP LUTLEY SCLATER and OSBERT SALVIN.

[Continued from p. 22.]

(Plates IV. and V.)

Subtribus II. *Tracheophonæ.*

Fam. XV. ANABATIDÆ.

Subfam. ANABATINÆ.

- ✓ ✓ 122. *ANABATES RUBIGINOSUS*, Sclater, P. Z. S. 1856, p. 288.
Transmitted by Mr. Skinner. In Sir William Jardine's and
Salvin's collections. Irides marked "red."
- ✓ 123. *SYNALLAXIS ERYTHROTHORAX*, Sclater, P. Z. S. 1855,
p. 75, pl. 86.
Originally described from examples collected in the vicinity
of Coban by Delattre. M. Sallé has transmitted specimens of
this bird from the vicinity of Cordova, Vera Cruz, as also of the
Anabates, of which he was the original discoverer.

Subfam. DENDROCOLAPTINÆ.

- ✓ ✓ 124. *PICOLAPTES AFFINIS*, Lafr. R. Z. 1850, p. 275.
Pacific coast-region. Runs up the trees like a *Certhia*. Ob-
served frequently.
- ✓ 125. *PICOLAPTES* — ?
A second species of this genus was obtained by Mr. Leyland,
near Omoa.

- ✓ 126. *DENDROCOPS ANABATINUS*, Sclater, P. Z. S. 1859 (Jan. 25th).

Omoa (Leyland).

- ✓ 127. *XIPHOCOLAPTES EMIGRANS*, sp. nov. *Xiphocolaptes albicollis*, Sclater, P. Z. S. 1857, p. 202.

An accurate examination of specimens of the large Central American and S. Mexican *Xiphocolaptes* has convinced us that it is specifically quite distinct from *X. albicollis* of Brazil, as indeed might have been expected from its "habitat." It does not appear to have come under the observation of M. de Lafresnaye, not being included in his Monograph of this group in the 'Revue et Magasin de Zoologie.' It differs from *X. albicollis* in its straighter, thicker, and lighter-coloured beak, which is of a dirty horn-coloured white except at the base; in the entire absence of the black abdominal cross-bands, which particularly distinguish *X. albicollis*; and in the less extension of the white on the throat. The whole length of a specimen in Sclater's collection is $12\frac{1}{4}$ inches, wing $5\frac{1}{2}$ inches, tail $4\frac{1}{4}$ inches. Its size, therefore, renders it easily recognizable among the other species of the group found in the same country.

- ✓ 128. *DENDROCOLAPTES SANCTI-THOMÆ* (Lafr.); Sclater, P.Z.S. 1858, p. 96.

Named from S. Thomas, near the mouth of the Rio Dulce, on the bay of Honduras—a Belgian colony, and not, as is supposed (P. Z. S. loc. cit.), from the island. In the collection of P. L. S. from Honduras.

- ✓ 129. *SCLERURUS GUATEMALENSIS* (Hartl.). *Tinactor guatimalensis*, Hartl. R. Z. 1844, p. 370.

We have not yet met with specimens of *Sclerurus* from Guatemala. It may probably be identical with *S. mexicanus*, but Dr. Hartlaub's description does not agree with that bird.

Fam. XVI. FORMICARIIDÆ.

Subfam. THAMNOPHILINÆ.

- ✓ 130. *THAMNOPHILUS DOLIATUS* (Linn.).

This bird is common about Dueñas. It is always found in

126. San Luis, Choctaw.

127. Poctum.

128.

129. Choctaw.

as S. mexicanus is distinct.

130 San Geronimo. Escuintla. Duenas, Petalhuaca.

131 = T. melanocrissus, Sch. choctum.

132. Choctum, Izabal.

133. Choctum, Izabal.

134. Omoo.

135. Not uncommon about Barranco Hondo, and
V. de Fuego as high as the forests of Calderas
(4300 ft.). Long. tot. absg. cauda 6.5.
Gape of young deep orange red.—

135. V. de Fuego Sp. 1871

136. San Jeronimo. Ruez altercado. Rio Michatoya near
Escuintla. Retalhuleu. S. Pedro martyr.

the very thickest underwood, near, but not upon the ground. It is by no means shy, but it is hard to procure good specimens from the difficulty of keeping it in sight at a distance sufficient to avoid spoiling them.

131. THAMNOPHILUS MELANURUS, Gould ?

Vicinity of Omoa (Leyland). It is likely that this northern bird is really specifically distinct from the true *T. melanurus* of the valley of the Amazons.

Subfam. FORMICIVORINÆ.

132. FORMICIVORA BOUCARDI, Selater, P. Z. S. 1858, p. 300.

Mr. Leyland obtained a female specimen near Omoa.

133. CERCOMACRA TYRANNINA, Selater, P. Z. S. 1858, p. 245.

A pair of this species are in the Derby Museum, obtained near Coban by Delattre. Mr. Leyland obtained one example—a female—near Belize.

Subfam. FORMICARINÆ.

134. GYMNOCHICHLA NUDICEPS (Cassin); Selater, P. Z. S. 1858, p. 274.

Vicinity of Omoa (Leyland).

135. GRALLARIA GUATEMALENSIS, Prev., Voy. Vénus, Ois. t. 2; Selater, P. Z. S. 1856, p. 294.

Specimens of this bird in the Derby Museum at Liverpool were collected by Delattre at Coban in June 1843.

Fam. XVII. TYRANNIDÆ.

Subfam. TÆNIOPTERINÆ.

136. SAYORNIS AQUATICA, sp. nov.

Fuliginosa : secundariis alarum et eaudæ rectrice extimâ extûs albo marginatâ : ventre medio albo : rostro et pedibus nigerrimis : long. totâ 9·25, alæ 3·25, eaudæ 3·1, tarsi 0·7, rostri à rictu ·8.

Aff. *Sayornithi nigricanti* et *S. cineraceæ*, sed ab hâe alis minùs albis et pogonio rectricis extimæ non omnino albo, ab illâ crassitie minore et crasso fuliginoso distinguenda.

This species is resident at Dueñas, where it may always be

found a short distance from the village, up the stream of the river Guacalate. Sometimes, however, it occurs about the lake. In its actions it is lively and restless, little resembling the Tyrants in these respects. It is always found near water, and is generally to be seen sitting on a stone on the margin, from which it constantly darts to seize a fly or insect from the surface.

Mr. Gould possesses a Guatemalan example of this species in no way differing from the Dueñas bird.

Subfam. TYRANNINÆ.

- ✓ 137. **ATTILA CITREOPYGIA**, Bp.; Sclater, P. Z. S. 1857, p. 228.
Transmitted by Mr. Skinner. In Mr. Gould's collection.
- ✓ 138. **SCAPHORHYNCHUS MEXICANUS**, Lafr. R. Z. 1851, p. 473.
Transmitted by Mr. Skinner.
- ✓ 139. **PITANGUS DERBIANUS** (Kp.): *Saurophagus derbianus*, Kaup, P. Z. S. 1851, p. 44, pl. 36: *Saurophagus guatemalensis*, Lafr. R. Z. 1852, p. 462.

This species occurs abundantly at Belize in December. At Dueñas it appears to be only a summer visitant, as it was found breeding there in the month of May, not having previously been observed. It builds a large loose nest with a great deal of superfluous matter about it, the entrance being at one side. The single nest found was composed entirely of small twigs, and was placed at the end of a branch about twenty feet from the ground. The eggs were laid about the third week in May. They are slightly pear-shaped, and in colour of a pale creamy white, spotted and blotched with brick-red; they measure, axis 1 in. $2\frac{1}{2}$ lines; diam. $10\frac{1}{2}$ lines.

- ✓ 140. **MYIODYNASTES LUTEIVENTRIS**, Sclater, P. Z. S. 1859 (Jan. 25th).
Transmitted by Mr. Skinner. In the collections of Mr. Gould and O. S.
- ✓ 141. **TYRANNUS INTREPIDUS** (Vieill.). (N. A.)
Mr. Gould's collection contains an example of this bird transmitted to him by Mr. Skinner.

37. El Zapote, Choctum.

38. San Geronimo, Savana Grande, Dueñas, Choctum.

39. San Geronimo, Escuintla, Dueñas, Belize.
Retalhuleu.

140. Escuintla, Poctum.

141. Yzabal, cays of Belize coast, Retalhuleu.

142. San Geronimo. Dueñas.

143. Izabal, San Geronimo. Escuintla. Retalhuleu.

144. Sacatepéquez, San Geronimo, Poctun.

145. San Geronimo, Dueñas. near City of Guatemala. Sta. Barbara
to Port of San José. Mar 1874. "Kilkish" of the Coban Indians.
Dueñas, San Geronimo, Coban.

147 San Geronimo. "Chinisch" (Cobanero) Retalhuleu,
La Union.

147 Dueñas, Huamuchal, Coban.

142. *TYRANNUS VOCIFERANS*, Sw. Quart. Journ. Sc. 1826, p. 273; Baird's Rep. p. 174. *Tyrannus cassinii*, Lawrence. (N.A.)
Transmitted by Mr. Skinner from Salamá, Vera Paz.

143. *TYRANNUS MELANCHOLICUS* (Vieill.).

This is a very abundant resident species about Dueñas. It builds in the month of May an open nest, slight in texture and flat in form. This structure is composed of sticks, with a few fine roots and horse-hair inside, and is usually placed at the end of a branch, at various heights from the ground. The eggs, generally four in number, are spotted with three shades of red on a creamy-white ground. Some examples measure—axis $11\frac{1}{2}$ lines, diam. 8 lines, but others are more rounded in form.

144. *MILVULUS MONACHUS*, Hartl. R. Z. 1844, p. 214 : *Milvulus tyrannus*, Selater, P. Z. S. 1856, p. 297.

Scarcely different from the S. American *M. tyrannus*. It occurs at Estansuclas, a village on the road between Izabal and Guatemala. Mr. Skinner has transmitted examples of it, as also of

145. *MILVULUS FORFICATUS* (Gm.) ; Pl. Enl. 677 ; Baird's Rep. p. 169.

146. *MYIARCHUS CRINITUS* (Linn.) ; Baird's Rep. p. 178. (N. A.).

Mr. Gould's collection contains a Guatemalan skin of this species.

147. *MYIARCHUS LAWRENCII* (Giraud) ; Baird's Rep. p. 181. A common and resident species at Dueñas, where its peculiarly melancholy note may frequently be heard.

148. *MYIARCHUS CINERASCENS* (Lawr.) : *M. mexicanus*, Baird's Rep. p. 179.

Also found at Dueñas ; but it is by no means of such frequent occurrence. Examples were procured at Livingston, at the mouth of the Rio Dulce, in December. We are not quite convinced of the identity of this bird with Dr. Kaup's *Tyrannula mexicana* (P. Z. S. 1851, p. 51), to which Professor Baird has united it.

- ✓ 149. *MYIARCHUS COOPERI*, Kaup; Baird's Rep. p. 180.
Transmitted by Mr. Skinner. In collection of P. L. S.
- ✓ ✓ 150. *CONTOPUS BOREALIS* (Sw.); Baird's Rep. p. 188.
Transmitted by Mr. Skinner. In Mr. Gould's collection.
- ✓ ✓ 151. *CONTOPUS MESOLEUCUS*, Sclater, P. Z. S. 1859 (Jan. 25th).
Mr. Gould's collection contains Guatemalan examples of this species.
- ✓ ✓ 152. *CONTOPUS SORDIDULUS*, Sclater, P. Z. S. 1859 (Jan. 25th).
Transmitted by Mr. Skinner.
- ✓ 153. *CONTOPUS VIRENS* (Linn.), Baird's Rep. p. 190.
Also transmitted by Mr. Skinner.
- ✓ 154. *EMPIDONAX FLAVIVENTRIS*, Baird's Rep. p. 198.
In Mr. Gould's collection from Guatemala.
- ✓ 155. *EMPIDONAX MINIMUS*, Baird, Rep. p. 195.
Occurs at Belize and Dueñas.
- ✓ 156. *EMPIDONAX ALBIGULARIS*, sp. nov.
Suprà sordide olivaceo-brunneus, uropygio rufescente tinete:
gutture albo: pectore et cervicis lateribus grisecenti-brunneis: ventre et crasso pallidè flavis: aliis et caudâ fusco-nigricantibus, illis pallido brunneo bifasciatis, secundariis extus albido angustè limbatis: tectricibus alarum inferioribus ochracecenti-brunneis: rostro superiore fusco, inferiore flavo: pedibus nigris: long. totâ 4·75, alæ 2·3, caudæ 2·1, tarsi 0·6, rostri à rictu 0·6.
Aff. *Empidonacti minimo*, sed staturâ paulò majore, alarum fasciis brunneis et gula purè albâ, dorso quoque obscuriore distingueda.
A single example of this apparently undescribed species was shot by Salvin at Dueñas.
- ✓ 157. *MITREPHORUS PHÆOCERCUS*, Sclater, P. Z. S. 1859 (Jan. 25th).
In Mr. Gould's collection, received from Mr. Skinner.
- ✓ 158. *ELAINIA VILISSIMA*, sp. nov. (Plate IV. fig. 1.)
Olivacea, pileo nigricanti-cinerco, fronte et superciliis sordidè albis: aliis fusco-nigris, tectricibus majoribus, secundariis et primariis secundâ, tertiatâ, quartâ et quintâ ad basim flavo

V. de Fuego, Cobau.

- S. 150 = C. portinax, Cab. et Stein. "Inside of mouth & tongue yellow, eye dark brown, legs & toes blackish slate. ♀. 12 Sep. 1873.
 S. 151 = Tyrannus borealis, Sw. Contopus borealis
 Dueñas, Cobau.

- S. 152 = Contopus richardsoni, Sw. "Chirish" Cobau,
 Dueñas, S. Jeronimo, Cobau, Petalhulew.
 153. Dueñas, Cobau, Petalhulew.

154. Xerinxtha dueñas, Petalhulew, Cobau.

155. Escuinaltas, Dueñas, Cobau, Petalhulew.

156. Dueñas, Cobau.

157. Calderas, V. de Fuego. Sep: 1873. Ridge above Totonicapa
 above Sta Maria (Luzaltenango).

158. Dueñas, Cobau.

159. Petalhuén, Dueñas, Cobán, Choctum.

160. Lajabow, Cobán.

161. San Jerónimo. "Kilkék" (Cobanero) Escuintla.
Patio Bolas, Petalhuén, Dueñas.

extus angustè limbatis: caudâ fusco-nigricante, olivaceo marginatâ: subtus cinerascenti-alba, abdomine toto flaviante, medialiter albescentiore, hypochondriis olivaceo tinctis: teetricibus alarum inferioribus flavis: rostro superiore nigro, inferiore fuso: pedibus nigris: long. totâ 5·0, aæ 2·4, caudæ 2·2, tarsi 0·73, rostri à rietu 0·5.

This apparently hitherto unnoticed and obscure species belongs to the section of the genus *Elainia*, which have the head-feathers flat, and not suberected, as in *E. pagana* (the type of the genus), *E. placens*, and others. Mr. Skinner has transmitted several examples of it, which are in Mr. Gould's and Sclater's collections.

159. *ELAINIA PLACENS*, Sclater, P. Z. S. 1859 (Jan. 25th): *Elenia* — ?, Sclater, P. Z. S. 1856, p. 297. (Plate IV. fig. 2.)

Suprà olivacea, pileo cineracco, cristâ interuè flavâ: alis eaudâque obscuris, olivaceo extus limbatis: capitis lateribus cum gutture albescenti-einereis, eiliis oculorum albis: abdomine et teetricibus subalaribus flavis: rostro nigro, mandibulae inferioris basi albidâ: pedibus obscure carneis: long. totâ 5·5, aæ 2·7, caudæ 2·6, tarsi 0·65.

Our figure is taken from a Mexican specimen of this pretty *Elainia* collected by M. Sallé near Cordova, in the month of March. It is a female, but the sexes are probably alike. A similar example is in Mr. Gould's collection received from Guatemala through Mr. Skinner.

160. *LEGATUS VARIEGATUS*, Sclater: *Elainia variegata*, Sclater, P. Z. S. 1856, p. 297.

Transmitted by Mr. Skinner. In Mr. Gould's collection.

161. *MYIOZETETES TEXENSIS* (Giraud). *Muscicapa texensis*, Giraud, B. Texas, pl. 1. *Tyrannula cayennensis*, Sw. Phil. Mag. 1827, p. 367.

An abundant and resident species at Dueñas. It builds in the month of May a nest composed of small roots and strong grass, of light construction, and covered over, having a large hole in the side. The eggs, generally three in number, are of a rich creamy white, thinly spotted at the obtuse end with red; they measure, axis $10\frac{1}{4}$ lines, diam. 8 lines.

Subfam. PLATYRHYNCHINÆ.

- ✓ 162. MUSCIVORA MEXICANA, Sclater, P. Z. S. 1856, p. 295.
Transmitted by Mr. Skinner.
- ✓ 163. TODIROSTRUM CINEREUM (Linn.); P. Z. S. 1855, p. 148.
Occurs at Belize in December.
- ✓ 164. MIONECTES ASSIMILIS, Sclater, P. Z. S. 1859 (Jan. 25th).

Fam. XVIII. COTINGIDÆ.

Subfam. QUERULINÆ.

- ✓ 165. LIPAVGUS RUFESCENS, Sclater, P. Z. S. 1857, p. 276.
Discovered by Delattre near Coban.

Subfam. TITYRINÆ.

- ✓ 166. TITYRA PERSONATA (Jard. & Selb.); Sclater, P. Z. S. 1857,
p. 70.
Transmitted by Mr. Skinner. One specimen was shot near
Iguana, a day's journey from Ysabal, in the coast-region.
- Hadrosomus.* ✓ 167. PACHYRHAMPHUS AGLALÆ (Lafr.); P. Z. S. 1857, p. 74.
Transmitted by Mr. Skinner from Cajabon.
168. PACHYRHAMPHUS POLYCHROPTERUS (Vieill.)?
Vicinity of Omoa (Leyland).

Subfam. PIPRINÆ.

- ✓ 169. CHIROXIPHIA LINEARIS (Bp.). *Pipra linearis*, Bp. P. Z. S. 1837, p. 113; Gould's Voy. Sulphur, Birds, pl. 20. p. 40. *Pipra fastuosa*, Less. R. Z. 1842, p. 174.
Mr. Skinner has transmitted skins of this beautiful bird from
the Vera Paz. Mr. Hinds's specimen, figured in the 'Voyage of
the Sulphur,' is said to have been from Realejo, on the Pacific
coast of Nicaragua; and M. Sallé informs us that he procured
examples near Granada, on the lake of Nicaragua.

- ✓ 170. MANACUS CANDÆI (Parzud.).

Originally described from specimens obtained in Honduras,
but ranges as far northward along the Atlantic coast-region as
the vicinity of Cordova, where M. Sallé obtained examples. See

162. Choctum, Retalhuleu, El Paraíso.

163 Escuintla, Retalhuleu, Dueñas, Choctum.

164. Retalhuleu, Cobán, Choctum.

165. There is a sp. in the coll. of the Soc. Econ. obtained somewhere in their country. —

166. Savana Grande, Sept. 1873.
Long. tot. abg. cauda 6.5. Tarsi &
toes brad-colored. Barranco-Hondo &



♂

Pajala Grande. San Jerónimo. Choctum, Gualau.

167. ♂ in Calderas 12 Sep. 1873. Iris dark brown; bill black above
slate beneath; tarsi & toes bluish slate; long: tot. abg. cauda 4.7
♀ & do. ~. V. de Fuego, Chilasco, Choctum.

168. Choctum.

1. 169 Only found on the Pacific. (cf Iris 1866 p. 203.)
Iris dark, tarsi & feet yellow. Retalhuleu, Savaca Grande

170. Choctum, Yzabal.

171 Choctum, Yzabal

172 "Rashon" of the Coban Indians Coban, Choctum.

v. 173 = H. albicollis (Gm.) There is only one species.
San Geronimo. "Pukui" (Cobanero)

174. Ab. a Calderas, Vido Fuego (8300 ft) Sep. 1873. Paticia. Feb. 1874
San Jose de Guatemala Mar 1874. Retalhuleu Dulcas.

175. Dueñas.

P. Z. S. 1856, p. 299. Mr. Leyland obtained a female specimen near Lake Peten.

- ✓ 171. **PIPRA MENTALIS**, Sclater, P. Z. S. 1856, p. 299, pl. 121. Transmitted by Mr. Skinner. In Mr. Gould's collection.

Subfam. COTINGIDÆ.

- ✓ 172. **COTINGA AMABILIS**, Gould, P. Z. S. 1856, p. 64, pl. 123. From the Vera Paz. Transmitted by Mr. Skinner.

Tribus II. FISSIROSTRES.

Fam. I. CAPRIMULGIDÆ.

- ✓ ✓ 173. **NYCTIDROMUS AMERICANUS** (Linn.) ?

Mr. Cassin has referred the Mexican and Central American bird to this species in his 'Catalogue of Caprimulgidae.' It does not, however, appear to be the same as *Nyctidromus derbianus* (as given by Mr. Cassin), the latter being a much larger bird, and having the outer tail-feather broadly edged with white on the inner web.

Fam. II. CYPSELIDÆ.

174. **HEMIPROCNE ZONARIS** (Shaw) : *Hirundo zonaris*, Shaw ; *Acanthylis collaris*, G. R. Gray.

Transmitted by Mr. Skinner.

175. **PANYPTILA MELANOLEUCA** (Baird) : *Cypselus melanoleucus*, Baird, Pr. Ac. Phil. 1854, p. 118 ; Baird, Rep. p. 141.

This Swift is by no means common in Guatemala ; indeed so local is it, that its presence might easily have been overlooked. It is found near Duchiñas ; and the following extract from Salvin's note-book relates to its capture :—

"On going out with my gun, about three o'clock in the afternoon of February 13th, I followed the course of the river *Guatecalate*; and after leaving the open country and the wood beyond, I entered a gorge with precipitous rocks on my right hand. On proceeding up this gorge for about a quarter of a mile, I heard a noise coming from the rock, which I at first took to be bats in some of the cracks. After watching some time, I saw two Swifts

dart into a hole, or rather crack in the rock, about twenty feet from the ground ; the noise then was louder than ever. Not altogether understanding this, I crossed the river and walked up to the foot of the cliff, and began to throw stones at the hole, to make the Swifts, which I had seen enter, fly out. Stones were no good, so I tried shouts, but with no better success. I then fired my gun at the hole, but still without result, the noise within continuing as loud as ever all the time. My last resource was to climb up as far as I could, and try and poke them out with a bamboo-eane that happened to be lying at my feet. When I had climbed up a little way, what should I see but a dead Swift, which had fallen through the crack, and been caught on the ledge where I found it ? It had evidently been killed by my random shot. When I had descended, I fired again, this time frightening out five or six birds, but not, as I thought, killing any. As soon as these five or six got clear of the rock, they were pursued by all the "*Cotylæ serripennes*," of which there were a great number in the valley. As I was watching their flight, down fell a Swift at my feet. I then loaded, and was about to leave the spot, when a third made its appearance, falling down the crack. I again climbed up to where I had found the first, both to see if there were any more, and to examine more closely. Then I found a good many feathers, some pieces of dry grass, and a skeleton of a Swift. This was evidently their common roosting-place, and there were others similar in the same rock ; how many inhabited the same hole I cannot say, for after I had shot three, and five or six were flying about, the noise continued as loud as ever." (O. S.)

Fam. III. TROCHILIDÆ.

- ✓ ✓ 176. *PHAETHORNIS CEPHALUS* (Bourc. et Muls.), Rev. Zool. 1848, p. 269 ; Gould, Mon. Troch. part xvi.
Transmitted by Mr. Skinner.

- ✓ 177. *PHAETHORNIS ADOLPHI* (Bourc.) ; Gould, Mon. Troch. part xiv.

This is an abundant species in the forest about Izabal, but the density of the undergrowth renders it extremely difficult to

v. 176 = Ph. longirostris (Blaauw). Izabal 19 June 1859. Choctan
Track to Petén.
Glaucis ruckeri, Guatemala. Specimens in Mus Soc. Econ de Guat.
I have also seen a second in the possession of M. a Boucard.—

177. Coban. Yzabal. - & all forests of the n. side

178. Dueñas, Vde Fuego.

1795. = L. hemileucus, Sicht. Above Calderas V. de Fuego & Mopan
of V. de Fuego. alt. 3000 ft. Sep: 1873. "Patgunun" of Coban
Indians in common with all large H-Birds. -

180. Coban & Forest of N. side.

181 Hacienda La Concepcion near Escuintla. Santanapita

182 above Santa Maria on road to Quezaltenango.
Dueñas, Chilaneo, Coban.

183 = L. guatimalensis, Gould. San Jeronimo, Coban,
Dueñas.

obtain a shot at so small and active an object. The bird is by no means shy, and takes but little notice of an observer, even searching the flowers almost within arm's reach for the insects and honey therein contained. In movement it is extremely elegant and graceful, and, flitting from flower to flower, shows its beautifully-formed tail conspicuously in every motion. Like all others of the family, it selects a small twig for its perch, giving preference to a dead one. While at rest, it trims its feathers dexterously with its bill, which every now and then it cleans, by rubbing it first on one side, then on the other of the twig on which it stands.

- ✓ 178. *CAMPYLOPTERUS RUFUS* (Less.) ; Rev. Zool. 1840, p. 73 ; Gould, Mon. Troch. part iii.

Transmitted by Don José Constancia. It occurs, but very rarely, at Dueñas, and would appear to be an inhabitant of an elevation higher than that district, as it is more numerous about Atitlan.

- ✓ ✓ 179. *CAMPYLOPTERUS DELATTRII* (Less.) ; Rev. Zool. 1839, p. 14 ; Gould, Mon. Troch. part x.

This magnificent species was first discovered by M. Delattre at Coban. Numerous examples have since been transmitted to Europe by Mr. Skinner.

- ✓ 180. *CAMPYLOPTERUS PAMPA* (Less.) ; Supp. Ois. Mouches, p. 125, pl. 15 ; Gould, Mon. Troch. part x.

Transmitted by Mr. Skinner.

- ✓ 181. *LAMPORNIS PREVOSTI* (Less.) ; Colibris, p. 87, pl. 24 ; Gould, Mon. Troch. part xv.

Transmitted by Mr. Skinner.

- ✓ 182. *PETASOPHORA THALASSINA* (Swains.), Phil. Mag. 1827, p. 441 ; Gould, Mon. Troch. part v.

Transmitted by Mr. Skinner.

- ✓ ✓ 183. *CYANOMYIA CYANOCEPHALA* (Less.) ; Less. Supp. Ois. Mouches, p. 134, pl. 18 ; Gould, Mon. Troch. part xi.

About Dueñas this is an abundant species. It frequents the shrubby forest, feeding principally among the flowers of a tree

which abounds there. This tree, which grows to a height of about twenty or thirty feet, bears clusters of white flowers, and has its branches and stem covered with spines, which sting when touched. Its bark also, when bruised, emits a milky fluid, which blisters the skin, if any be allowed to remain upon it. The bird, when taking its food from this tree, places itself in front of a bunch of the flowers, and hovers opposite, at a distance of about two or three inches. On perceiving the object of its search, it darts in, and, seizing whatever that may be, insect or honey, returns to its position in front of the cluster. So it passes on from blossom to blossom, and in like manner from cluster to cluster, until the whole tree is thoroughly ransacked. Humming-birds do not remain long on the wing at once, but rest frequently, choosing for that purpose a small dead or leafless twig at the top, or just within the branches of the tree. While in this position, they take the opportunity of trimming their feathers and cleaning their bill, all the time keeping up an incessant jerking of their wings and tail. When this operation has been gone through, they peer about for fresh flowers on which to dart. The cry of the present species is somewhat represented by the work "*chirik*," uttered frequently and with great rapidity. This cry seems common to all the family, and it is only from an intimate acquaintance that one can trace a difference between the species. When they are flying from one place to another, or pursuing one another, this cry is especially used, and in the latter case it is uttered with great vehemence. The humming sound, from which these birds take their trivial name, is something like that produced by a large beetle; but very little practice will soon so accustom the ear, that it seldom mistakes the unseen presence of a Humming-bird for anything else.

- ✓ 184. *FLORISUGA MELLIVORA* (Linn.) ; Gould, Mon. Troch. part ii.
- ✓ 185. *EUGENES FULGENS* (Swains.) ; Phil. Mag. 1827, p. 441; Gould, Mon. Troch. pt. xii.
- ✓ 186. *MYIABEILLIA TYPICA* (Delatt. et Less.) ; Rev. Zool. 1839, p. 16; Gould, Mon. Troch. pt. viii.

184. hear Peter, Forest of Sierra Cal. of N. side.

185. Vde Fuego, alt. 8300ft. Sep. 1873. Tactic, Dueñas.
Chilasco.

186. V. de Fuego. alt 8000ft. Sep. 1873, coban, Chilasco.

187. ♂ Ridge above Calderas, V.de Fuego. Alt. 8000 ft.
Iris dark; bill black; tarsi & toes brown, soles flesh; claws black.
Long. tot. abg. cauda 3.2.
188. Quezaltenango, V.de Fuego, Coban.
189. ♂ Ridge above Calderas, V.de Fuego. Alt. 8000 ft. —
Iris dark; bill black; tarsi, toes, & claws dark hazel; soles flesh.
Long. tot. abg. caud 3.3. Chilasco, V.de Agua.
190. San Geronimo. Escuintla. —
191. Doricha henicura. Dueñas, Coban.
192. Ridge above Calderas, V.de Fuego. Alt. 8000 ft. Iris dark; bill
flat & claws black. Long. tot. abg. cauda 2.1. Chilasco.
193. Very abundant in the ridges above Totonicapan. Ab. 1174
above Dueñas (Paramos)
- 194 San Geronimo, Coban.
195. San Geronimo. Everywhere from Sept. to March.

- ✓ 187. *DELATTRIA HENRICI* (Less. et Delatt.); Rev. Zool. 1839, p. 17; Gould, Mon. Troeh. pt. viii.
- ✓ 188. *DELATTRIA VIRIDIPALLENS* (Boure. et Muls.), Ann. de la Soc. de Lyons, 1846, p. 321; Gould, Mon. Troeh. pt. ix.
- ✓ 189. *LAMPROLEMA RHAMI* (Less.); Rev. Zool. 1838, p. 315; Gould, Mon. Troeh. pt. xi.
- ✓ 190. *HELIOMASTER CONSTANTI* (Delatt.); Eeho du Monde Savant, 1843; Gould, Mon. Troeh. pt. v.
Examples of all these six species have been transmitted by Mr. Skinner.
- ✓ 191. *THAUMASTURA ENICURA* (Vieill.); Gould, Mon. Troeh. pt. iv.

On no occasion were the males of this speeies observed about Dueñas during the months of February and March; indeed it was not until the month of May that both males and females were seen together, at which time, the *nopal* of the eohineal plantations being in full flower, great numbers of Hummingbirds, especiaially of this speeies, were in the habit of feeding from the blossoms of that eaetus. The females during the winter months are common enough, and frequent the same plaees, and feed principally on the same trees, as the *Cyanomyia cyanocephala*.

- ✓ 192. *SELASPHORUS HELOISAE* (Less. et Delatt.), Rev. Zool. 1839, p. 15; Gould, Mon. Troeh. pt. viii.
- ✓ 193. *SELASPHORUS PLATYCERCUS* (Swains.); Gould, Mon. Troch. pt. iii.
- ✓ 194. *TRYPHENA DUPONTI* (Less.), Colibris, Supp. pl. 1; Gould, Mon. Troeh. pt. i.

Examples of these three speeies have been transmitted by Mr. Skinner.

- ✓ 195. *TROCHILUS COLUBRIS* (Linn.); Gould, Mon. Troeh. pt. xv.
This speeies would appear to be abundant in the winter months in Guatemala, as numerous examples have been transmitted by Mr. Skinner. It oeours at Aeatenango, a village on

the southern slope of the great Cordillera, showing that it chooses for its winter retreat the moderate climate afforded by the region lying between the elevations of 3000 and 4000 feet.

- ✓ 196. *LOPHORNIS HELENÆ* (Delatt.), Rev. Zool. 1843, p. 133; Gould, Mon. Troch. pt. x.

- ✓ ✓ 197. *AMAZILLIA CORALLIROSTRIS* (Bourc. et Muls.), Ann. de la Soc. de Lyons, ix. (1846) p. 328; Gould, Mon. Troch. pt. xiii.

This species seems to be an inhabitant of the hot sea-board only, and does not extend its vertical range to a greater elevation than 2000 feet. In such regions on the Pacific coast it is very abundant, and is, in fact, the commonest of the family, in some parts almost swarming. In every village numbers may be seen flitting about the blossoms of the orange- and lime-trees. Its horizontal range appears to be extensive, and may be said to include the whole of the southern portion of Guatemala from the confines of Chiapas to the State of San Salvador, and probably also embraces the Balsam coast of that Republic, as Capt. Taylor obtained examples on Tigré Island, Bay of Fonseca (P. Z. S. 1858, p. 358).

- ✓ 198. *AMAZILLIA RIEFFERI* (Bourc.), Rev. Zool. 1843, p. 103: *A. dubusi* (Bourc.).

- ✓ ✓ 199. *AMAZILLIA ARSINOË* (Less.).

- ✓ 200. *THAUMATIAS CANDIDUS* (Bourc.), Ann. de la Soc. de Lyons, 1846.

- ✓ 201. *CHRYSURONIA ELICLE* (Bourc. et Muls.), Ann. de la Soc. Sci. de Lyons, 1846, p. 314; Gould, Mon. Troch. pt. xvi.

- ✓ 202. *HELIOPEDICA MELANOTIS* (Swainss.): *Trochilus melanotus*, Swains. Phil. Mag. 1827, p. 441; Gould, Mon. Troch. pt. xv.

- ✓ 203. *EUPHERUSA EXIMIA* (Delatt.); Gould, Mon. Troch. pt. xiv.

- ✓ ✓ 204. *CHLOROSTILBON CANEVETI* (Less.), Colibris, Supp. pl. 37. Specimens of these seven species have been transmitted by Mr. Skinner.

196. "Akshukub" (Cobauero). Cobau

s. 197 = A. cinnamomea (Less.) San Geronimo.

Santa Lucia Jan⁹ 1874. Escuintla, Retalhuleu,
Cays of the Belize coast.

198. Izabal; 19 June 1859.; Cobau, Track to Petén.

s. 199. = A. devillii. Escuintla. Duenas, Cobau. Yzabel.

200. Izabal 19 June 1859. "Tzunum" of Cobau Indians in common
with all smaller H. Birds. Cobau.

201. Masagua, below Duenas, Retalhuleu, Cobau.

202 San Geronimo. Santa Rosa above Salama, Quezaltenango
v. de Fuego & v. de Agua. Sta Barbara.

203. Cobau, Choctum + track to Petén.

s. = Chlorolampis oberti, Gould. San Geronimo.
Duenas, Cobau.

205. Gyabal 19 June 1859. "Tzumunkak" (Cobanero).
Choctum.

206. San José, Huamuchal. Belize river. Choctum

207. Río Dulce, Dueñas, San Jerónimo. "Chachem" (Cobano)
San José, Huamuchal, Santana Mictaw.

208. San Jerónimo, San José, Huamuchal.

✓ 209 = L. cabanisi, Tsch. Río Dulce, San Jerónimo.
Dueñas Huamuchal.

210. Santana Mictaw, Chiapas, San José.

211
San Jerónimo  eye of Momotus lessonii. Long. tot. abg. cauda 78-
91 mm., Dueñas, San Jerónimo, Savana grande.

212. Iris dark brown; feet & toes dull yellow. Long. tot abg cauda
6.0. -- .

V. de Fuego.



Fam. IV. GALBULIDÆ.

- ✓ 205. *GALBULA MELANOGENIA*, Selater, Contr. Orn. 1852, p. 61.
Inhabits the Atlantie coast-region. Specimens were obtained by Leyland near Omoa.

Fam. V. ALCEDINIDÆ.

- ✓ 206. *CERYLE TORQUATA* (Linn.).
Observed on the Rio Dulee, but not obtained; so there may be some doubt as to the species.
- ✓ 207. *CERYLE ALCYON* (Linn.) (N. A.)
Shot at Belize, and again on the Golfo Dulee, and appears to be tolerably common in the winter on the Atlantie coast.
- ✓ 208. *CERYLE AMAZONA* (Gm.).
Transmitted by Mr. Skinner. Proenred by Capt. Taylor on the lake of Yojoa.
- ✓ 209. *CERYLE AMERICANA* (Gm.).
Oeours abundantly everywhere upon the small streams in the Atlantie coast-region and in the interior. Observed near Dueñas frequently, both on the Guaealate and on the outlet of lake of Dueñas.
- ✓ 210. *CERYLE SUPERCILIOSA* (Linn.).
This species is found in the Pacific coast-region, frequenting the forest-swamps as well as the large rivers. The specimens, on comparison with S. Ameriean examples, show no appreeciable differences.

Fam. VI. MOMOTIDÆ.

- ✓ 211. *MOMOTUS LESSONI* (Less.).
Transmitted by Señor Constaneia and Mr. Skinner. A Motmot, probably of this species, was observed both in the Pacific and Atlantie coast-regions. It is usually seen sitting very upright on a low branch of a tree, and uttering its low, melanoholy double note—*hōō-hōō*—whence the generie name was doubtless derived. It is by no means shy, and known by the Spanish name of ‘*Paxaro bobo*,’ or stupid bird.
- ✓ 212. *HYLOMANES GULARIS* (Lafr.).
Transmitted by Señor Constaneia and Mr. Skinner.

- ✓ 213. *PRIONIRHYNCHUS CARINATUS* (Du Bus); P. Z. S. 1857,
pl. 128. et 1858, p. 357.

Obtained by Capt. Taylor near the lake of Yojoa, Honduras.

- ✓ 214. *EUMOMOTA SUPERCILIARIS* (Jard. & Selb.). *Momotus yucatanensis*, Cabot, Boston Journ. N. H. iv. p. 467.

Inhabits the Atlantic coast-region of Yucatan, extending as far round as the Bay of Campeachy.

Fam. VII. TROGONIDÆ.

- ✓ 215. *TROGON MEXICANUS* (Swains.); Gould, Mon. Trogonidæ, pl. 1.

Salvin's collection contains Guatemalan examples of this bird.

- ✓ ✓ 216. *TROGON PUELLA*, Gould, P. Z. S. 1845, p. 18: *Trogon xalapensis*, Du Bus.

Mr. Skinner has sent many examples of this bird to Europe, transmitted to him from the Department of Vera Paz. It occurs in the Pacific coast-region. It is therefore in the 'tierra caliente,' and not in the mountainous district, that *T. puella* is found.

- ✓ 217. *TROGON CALIGATUS*, Gould, Mon. Trogonidæ, pl. 7.
This is an abundant species in the Pacific coast-region.

- ✓ 218. *TROGON MELANOCEPHALUS*, Gould, Mon. Trogonidæ, pl. 12.

Guatemala and Honduras.

- ✓ 219. *TROGON CITREOLUS*, Gould, Mon. Trogonidæ, pl. 13.
Mr. Gould's example of this rare Trogan is said to be from Yucatan.

- ✓ 220. *TROGON MASSENA*, Gould, Mon. Trogonidæ, pl. 16.
Honduras (Leyland).

- ✓ 221. *PHAROMACRUS PARADISEUS* (Bp.): *Trogon pavoninus*, Temm. (nec Spix) Pl. Col. 372: *Trogon paradiseus*, Bp. (1826): *Pharomacrus mocinno*, De la Llave, Registro Trimestre, i. p. 48 (1831): *Calurus resplendens*, Gould, Mon. Trog. pl. 21; Rev. Zool. 1843, p. 63.

Though this most beautiful of all the Trogons has never come under the observation of a naturalist since M. Delattre discovered

213 I have now seen three sp. of this bird from Guat. & I believe I saw it alive near Santana on the Rio Negro close to the gorge of La Campana, Mar. 1874. One of the above sp. is in the Mus. of the Soc. Econ.

214. San Geronimo, Palenque. Very common between Escuintla and San José Mar. 1874. Medio Monte Mar. 1874. Zacapa, valley of the Motagua.

215. V. de Fuego, San Geronimo.

v. Long: tot: abg. caudas 5:2 — "Mankuk" of the Coban Indians.
Coban. V. de Fuego, La Union (= elegans)

217. Retalhuleu, La grande, V. de Fuego (4600 ft.)

218. Choctum, La Union.

s. 219 (G. Niz 1866, p. 204) —

220. Mts of Rasché, Choctum.

221 "Kuk" of Coban Indians. - Coban, Forests of Luril
V. de Fuego + V. de agua. above Chicamán in the
Chantla range +.

222. Mirandilla Dec. 1874. Coban
223. Dueñas. Savana grande, Retalhuleu.
- s. 224 = P. cayana. (G. Homond. p.) San Jeronimo.
Retalhuleu, Dueñas, Acajutla. -
225. Valley of the Motagua.

it at Coban, and consequently nothing further can be added to our knowledge of its habits, yet the following observations define the limits to which its range extends. The altitude at which this species is found exceeds 6000 feet, and it would appear to occur more or less numerously in all the mountainous districts that attain such an elevation. A few may be found at Calderas, in the Volcan de Fuego, according to Mr. Wyld of Dueñas, who says that the females are much more numerous than the males in that locality, and that the males are seldom seen.

The Department of Quesaltenango, and its capital of the same name, the second city in Guatemala, derive their appellation from this bird,—“*Quesal*” being the term applied in the Kachiquel language to this Trogon, the termination “*tenango*” signifying the place of. Hence Quesaltenango is, *par excellence*, the place of the Quesal. However, it is from Coban and its neighbourhood, in the Department of Vera Paz, that the whole of the skins that find their way to Europe are procured; and judging from the great number of specimens that are sent, the bird must be very numerous in that locality.

Tribus III. SCANSORES.

Fam. I. CUCULIDÆ.

222. *DROMOCOCYX MEXICANUS*, Bp. P. Z. S. 1856, p. 308.
Transmitted by Mr. Skinner from Cajabon, Vera Paz.

223. *DIPLOPTERUS EXCELLENS*, Selater, P. Z. S. 1857, p. 228.
San Pedro, Honduras (Leyland).

224. *PIAYA MEXICAÑA* (Sw.), Phil. Mag. 1827, p. 440;
Selater, P. Z. S. 1856, p. 308.
Honduras (Taylor), Guatemala (Constancia), Lake of Peten
and Omoa (Leyland).

225. *PIAYA ERYTHROPYGIA*, Less. Rev. Zool. 1842, p. 209;
Des Murs, Icon. Orn. pl. 66.

The following remarks, referring to the only specimen seen,
are from Salvin's note-book:—

“As we were riding from Subinal to Laguna, two villages on

the road from Izabal to Guatemala, the latter being about eleven leagues from the capital, my attention was called by one of my companions to a bird he had just seen cross the road. The underwood was very dense at that part, and I had great difficulty at first in catching a glimpse of the bird; and when I succeeded, its distance from me was so short that I for some time hesitated to shoot, my gun being loaded with No. 6 only. Seeing no prospect of a better shot, I at last fired, and reduced my specimen to a mangled mass, which I was only just able to make into a very indifferent skin.

"As the time between my first seeing the bird and shooting it occupied some minutes, I was enabled to watch it closely. Its habits assimilate to those of the *Geococcyx affinis*, and it skulks along the ground as that species does, now running rapidly, now standing still with its head erect. But it differed from *G. affinis* in climbing about the branches of the low underwood. The song of this Cuckoo, though short, is peculiarly rich in its tone, and there is a mellowness in each note that I have seldom heard surpassed. An Indian to whom I showed it at Laguna called it '*El reloz*,' or '*The watch*,' and said that it sang at every hour of the day, the length of the song depending upon the hour; thus, he said, that at 1 o'clock it sang a very short song, and at 12 o'clock a very long one! Another Indian called it '*El pajarito tonto*,' or '*The foolish bird*,' a name strictly applicable, as I could have almost caught the one I shot with my hand."

The principal colour of the bare skin at the back of the eye is almost cobalt-blue; the legs are brownish yellow, and the irides dark.

226. *GEOCOCCYX AFFINIS*, Hartl. Rev. Zool. 1844, p. 215.

This Cuckoo is abundant all over the Central region, and also occurs, though sparingly, in the Atlantic coast-region.

The habits of this curious bird, especially in the way it runs, remind one much of the large lizard commonly known in Guatemala as the "*Iguana*." It passes rapidly across the road, as that reptile does, first peering out of the underwood before making a rush, and now and then stopping, just before diving in again, to take a final survey. The bird is by no means shy, often remaining quite still by the side of a path, looking at you



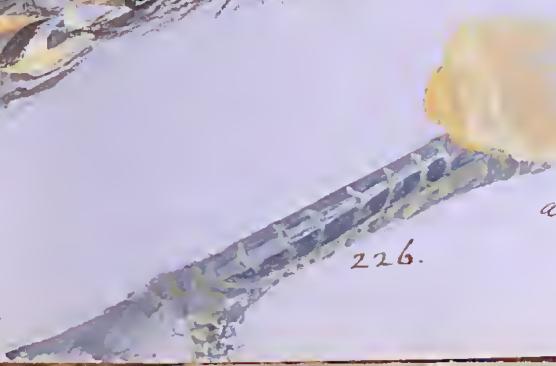
226 Taken by C.O.S from a
freshly killed specimen Dueñas
Sept. 1873.
Long: tot. abg. cauda 10.0 -

San Geronimo.

Corp of La Campana
Río Negro.

above Zicche' Dueñas

226.



227. Río Dulce, San Jerónimo. Izabal 19 June 1859.
Escuintla or road to San José Mar. 1874.
Retalhuleu, Dueñas.
228. "Silipam" (cobanero) Choctum, Yzabal
229. Pato Bolas, Retalhuleu, Choctum.
230. Cerro de Zunil, Las Nubes, Feb. 1874 "Rashipan" (Urucoy)
V. de Fuego, Cobán, Totonicapan, Chimalco.
231. Savana grande. Sep. 1873. Rabinal, Savana grande
Retalhuleu, S. Jerónimo -
232. Savana grande

with a sort of inquiring gaze, as if it had never seen man before. The Spanish name for it is "Sigamonte."

227. *CROTOPHAGA SULCIROSTRIS*, Sw. Phil. Mag. 1827, p. 440.

Though the habits of this bird closely resemble those of its congener, *C. ani*, of the West India Islands, of which Mr. Gosse, in his 'Birds of Jamaica,' gives a full description, the notes of the two species are quite different, and resemble each other only in character. It occurs commonly at Dueñas, and was found in the vicinity of Omoa by Leyland.

Fam. II. RHAMPASTIDÆ.

228. *RHAMPHASTOS CARINATUS* (Sw.); Gould, Mon. ed. 2, pl. 7.

Along the banks of the Rio Dulce this Toucan is abundant. It is known to the negro sailors as the "Billy-goat," to the bleating of which animal the cry of the bird has a faint resemblance.

229. *PTEROGLOSSUS TORQUATUS* (Wagler); Gould, Mon. ed. 2, pl. 14.

Like the last, occurs on the Rio Dulce, but is not so numerous. It is found also in the Pacific coast-region, where it is not uncommon in the neighbourhood of San Sebastian.

230. *AULACORHAMPHUS PRASINUS* (Gould), Mon. ed. 2, pl. 29.

A true inhabitant of the mountainous districts and central coast-region. It occurs at Calderas, also in Vera Paz, from which last locality Mr. Skinner has sent numerous examples. The Spanish name for all the Toucans is "Cucharon."

Fam. III. PICIDÆ.

231. *DRYOCOPUS GUATEMALENSIS* (Hartl.), Rev. Zool. 1844, p. 214: *D. regius*, Reichenb.

Extends from S. Mexico, where it was procured by Sallé (P. Z. S. 1857, p. 226), through Guatemala to Honduras, where Captain Taylor obtained specimens. See P. Z. S. 1858, p. 359.

232. *DRYOCOPUS SCAPULARIS* (Vig.): *D. leucorhamphus*, Reichb.
Seems to have the same range as the preceding, having been

also procured in the two last-mentioned localities. Transmitted by Mr. Skinner from Vera Paz. Salvin saw either this or the former species near the city of Guatemala fly from a tree, which it was ascending, and return, after seizing an insect in the air.

✓ 233. **CAMPEPHILUS IMPERIALIS** (Gould) ?

This largest and finest of all the *Picidae* is believed to occur in the densely-wooded *barrancos* which are scored out in the sides of the Volcan de Fuego. The description given by Mr. Wyld, of Dueñas, of a specimen shot by him, seems to correspond to no other known species.

✓ 234. **CENTURUS SANTACRUZI**, Bp. P. Z. S. 1837, p. 116: *Picus dubius*, Cabot.

Seems generally distributed in Guatemala, occurring principally in the coast-region; but also seen at Dueñas. Dr. Cabot says that this bird is not uncommon in Yucatan. Captain Taylor procured it near Comayagua, Honduras, and Mr. Skinner has transmitted examples from Salamá, Vera Paz.

✓ 235. **CENTURUS PUCHERANII** (Malherbe); Bp. Conspl. p. 120. Vicinity of Omoa (Leyland).

✓ 236. **SPHYROPICUS VARIUS** (Linn.) ; Baird, Rep. p. 103. Transmitted by Mr. Skinner.

✓ 237. **PICUS JARDINII**, Malherbe; P. Z. S. 1858, p. 359.

Procured by Capt. Taylor in Honduras, near Taulevi; and extends as far northwards as Orizaba.

✓ 238. **PICUS SCALARIS**, Wagler: *Picus parvus*, Cabot.

Obtained by Dr. Cabot in the neighbourhood of Tocul, Yucatan.

✓ 239. **CHLORONERPES YUCATANENSIS** (Cabot); Sclat. P. Z. S. 1856, p. 307.

Yucatan (Cabot). Occurs near Dueñas, but not very commonly.

✓ 240. **CHLORONERPES SANGUINOLOENTUS**, Sclater, P. Z. S. 1859 (Jan. 25th).

Near Omoa (Leyland).

No. 233. Cf. Min, 1876, p. 204.

234 = C. albifrons, San Geronimo. Escuinilla. —
Ratachulew.

235, Choctum.

236. San Geronimo. "Peech" Cobanero. Coban, Upper Pine
Forest of V. de Fuego.

237. ♀. 12 Sep. 1873. Inside of mouth & tongue reddish flesh; iris
reddish hazel; tarsi and toes greenish slate; soles yellowish;
long: tot: alay: canda 5:2. V. de Fuego. S. Geronimo. Chilesco.

239 San Geronimo. Savana grande.

241. Chilasco. Very common in the ridges above Totonicapan
In Ridge above Rabinal a number ^{were} congregated
near a Pine tree the bark of which was ~~shot~~ pierced
full of holes many of which contained an acorn.
Near: 1874. V. de Fuego.

242. Near Telemas. Choctum.

243. Calderas, V. de Fuego. Sept. 1873. Pajal Grande, V. de Fuego.
Common in the Ridges above Totonicapan Feb. 1874.
Tactic ^{Mar} 1874 Quetzaltenango.

244 San Agustin, Feb. 1874 San Juan del Sur May 1873.
Aguna, Pine ridge of Poctun. Choctum &c.
Huamachal & La Union.-

245. Petén.

246 Chiquimula (Mas see. Con. de Huat.) V. de Fuego.

✓ 241. MELANERPES FORMICIVORUS (Sw.).

Is found in the central region. Specimens were obtained at Calderas, on the Volcan de Fuego, where it frequents the forests of evergreen oaks and feeds upon the acorns.

✓ 242. CELEUS CASTANEUS (Wagler); P. Z. S. 1858, p. 359.

Specimens of this species were obtained by Leyland in his recent expedition to Honduras, and by Capt. Taylor on the Interocceanic railway route, on the Atlantic slope. It seems confined to the hot coast-region.

✓ 243. COLAPTES MEXICANOIDES, Lafr. R. Z. 1844, p. 42 : *Colaptes rubricatus*, Gray and Mitch. Gen. B. pl. 111 (nec Licht.).

This is quite a distinct species from *Colaptes mexicanus*. (Confer Baird, Gen. Rep. p. 121.) Specimens were procured by De-latre near Coban. It was observed to occur abundantly in the *barranco* of Los Chocoyos, in the Altos of Guatemala, in May 1858. Gray and Mitchell's plate gives a very good representation of the male, though the synonyms quoted are all referable to *C. mexicanus*. The female has the rictal spot brown, like the head, instead of red. In *C. mexicanus* the female has no rictal spot.

Fam. IV. PSITTACIDÆ.

Subfam. ARINÆ.

✓ 244. ARA ARACANGA (Gm.); Pl. Enl. 12; Wagler, Mon. Psitt. p. 672.

This *Ara* is common in the Pacific coast-region, and generally seen in pairs. They keep to the topmost branches of the forest trees, and, as in captivity, are very noisy. The bird is commonly known as "Guacamaya."

✓ 245. CONURUS ASTEC, Souancé, Rev. Zool. 1857, p. 97.

Obtained by Leyland at Belize. In collection of P. L. S.

✓ 246. CONURUS LINEOLATUS (Cassin) : *Psittacula lineolata*, Cassin, P. Ac. Sc. Philad. : *Bolborhynchus catharina*, Bp. Compt. Rend. xliv. p. 538.

The example of this Parrot in the collection of Dr. Cabot of Boston was obtained by him in the island of Cosumel, Yucatan.

Subfam. PSITTACULINÆ.

✓ 247. PIONUS SENILIS (Spix).

Transmitted by Mr. Skinner.

✓ 248. CHRYSOTIS AURIPALLIATUS (Less.) : *Amazona auropalliatus*, Less. Descr. Mamm. et Ois. p. 198; *Psittacus flavinuchus*, Gould, Zool. Voy. Sulphur, p. 45, pl. 27.

This Parrot is common in the Pacific coast-region of Guatemala.

✓ 249. CHRYSOTIS ALBIFRONS (Sparm.) ; Souancé, Icon. des Perr. pl. 30; P. Z. S. 1858, p. 35.

✓ 250. CHRYSOTIS — ?

A young bird in Sclater's collection, from Omoa (Leyland), is difficult to determine, but not improbably belongs to an undescribed species.

There are considerable additions to be made to the present list of Central American Parrots.

EXPLANATION OF PLATE V.

Fig. 1. Egg of *Tanagra vicarius* (p. 16).

Fig. 2. Egg of *Pyrgisoma biarcuatum* (p. 18).

Fig. 3. Egg of *Pitangus derbianus* (p. 120).

Fig. 4. Egg of *Tyrannus melancholicus* (p. 121).

Fig. 5. Egg of *Myiozetetes texensis* (p. 123).

Fig. 6. Egg of *Cyanocitta melanocyanea* (p. 21).

Fig. 7. Egg of *Turdus grayii* (p. 5).

[To be continued.]

XIII.—*Observations on the Birds of St. Croix, West Indies, made, between February 20th and August 6th 1857 by ALFRED NEWTON, and, between March 4th and September 28th 1858 by EDWARD NEWTON. (Part II.)*

[Continued from p. 69.]

† 8. GRASS-GREEN-BREASTED HUMMING BIRD. *Eulampis chloroleucus*, Gould, Monogr. Troch. pt. xiv. "Doctor Bird."

This is the only species of this wonderful group of little birds that is at all common in St. Croix. Wilson, Audubon, Mr.

247 Coban, La Laguna, Choctaw.

248 Retalhuleu, Realjo. Tapachula. La grande
San José &c.

249, Rio Chiquate, R. Motagua, V. de Fuego.
Retalhuleu, Petén.

250 = Ch. guatimalæ.

251. Belize, San Geronimo. ~~Sosol~~ "Shewa-sosol" (Cobanero)
Escuintla.

252. Belize, San Geronimo. "Sosol" (Cobanero) Escuintla.

THE IBIS.

No. III. JULY 1859.

XXIII.—*On the Ornithology of Central America.* Part III.
By PHILIP LUTLEY SCLATER and OSBERT SALVIN.

[Concluded from p. 138.]

Ordo II. ACCIPITRES.

Fam. I. VULTURIDÆ.

✓ 251. *CATHARTES AURA* (Linn.). (N. A.)

If Mr. Cassin's authority for the occurrence of *C. burrovianus* at Vera Cruz is good, that bird also doubtless occurs in Guatemala; but, as far as we know, it has not yet been observed. All the birds especially noticed by Salvin, presented the characters of the true *C. aura* of the U.S.

In this country this Vulture is not nearly so abundant as *C. atratus*. Leaving to that species all the duties of the scavenger, it frequents the more uncultivated and forest districts. A few may always be seen about the Lake of Dueñas.

✓ 252. *CATHARTES ATRATUS* (Bartram). (N. A.)

Except perhaps *Quiscalus macrurus*, this is the most familiar bird in Guatemala. Every town and village has its *Zopilotes*; and badly would the inhabitants exist were it not for these diligent scavengers. At night they usually retire to the forest, and in the early morning troop back to their posts in the streets and lanes, and about the tops of the houses and churches.

They build their nests in the forest, though, in Antigua Guatemala, it is said that they use the ruins of the old churches for that purpose.

✓ 253. *GYPARCHUS PAPA* (Linn.). (N. A.)

It is only on the coast-regions that the King Vulture is found; it does not extend its range into the central district. In the above localities it is frequently to be observed either soaring high in the air, and wheeling in circles during the heat of the day, or presiding over a putrid earcase, and driving off any presumptuous Black Vulture that may venture to approach within prescribed limits. Having eaten his fill, he sits in a tree hard by the earcase, sleeping and digesting his meal, while his late attendants fight and scramble for each disgusting morsel. The Spanish term for this bird is "el Rey Zopilote," exactly answering to our King Vulture.

Fam. II. FALCONIDÆ.

Subfam. POLYBORINÆ.

✓ 254. *POLYBORUS THARUS* (Molina) : Baird's Report, p. 45. (N. A.)

This bird is universal in its distribution throughout the country, and appears equally abundant everywhere. At Dueñas it is a constant resident, and breeds in the surrounding hills.

The food of this species consists principally of the ticks of animals.

✓ 255. *IBYCTER AMERICANUS* (Bodd.) : Pl. Enl. 417: *Falco aquilinus*, Gm.

In the Pacific coast-region this bird is found; and its extraordinary ery, well expressed by the word 'cacao,' uttered with the first syllable reiterated several times, may not unfrequently be heard resounding through the dense tropical forest. It would appear to be confined to this region, since no examples have been as yet forwarded to this country through the instrumentality of Mr. Skinner or other hands. The species may be generally observed in pairs, seldom singly; but sometimes several occur together. The ery is made by the bird when sitting on a branch; and the tail is expanded with a jerk, on the utterance of each note.

253. Mesagua. June 1873. San Geronimo. Escuintla.

254 San Geronimo. Escuintla, San José on the sea beach.

257. San Geronimo. Don Garcia Jan⁹ 1874.

261. Mar: 1874 Mr F. Say had a sp in Coban.

262. Rio Dulce, San Geronimo. "Kaerk-cooch" (Cobanero)

Subfam. AQUILINAE.

- ✓ 256. *PANDION CAROLINENSIS* (Gm.) : Baird, Rep. p. 44.
(N. A.)

Occurs abundantly on both the coast-regions; also particularly noticed about Belize, where it is said to breed.

- ✓ 257. *HERPETOTHERES CACHINNANS* (Linn.).

This species is not uncommon in the Atlantic coast-region, and about the village of Chimalapa it is even of frequent occurrence. Throughout the Pacific coast-region it would appear to be less numerous, as a single individual only was noticed near the hacienda 'La Grande.' It is known among the Spaniards by the name of the 'Guansi.'

- ✓ 258. *SPIZAËTUS ORNATUS* (Daud.).

Numerous examples of this fine bird have been transmitted by Mr. Skinner from the Vera Paz, procured in Cajabon and other localities.

- ✓ 259. *SPIZAËTUS TYRANNUS* (Max.) : Temm. Pl. Col. 75.

Likewise transmitted by Mr. Skinner, and now in the Norwich Museum.

- ✓ 260. *SPIZAËTUS MELANOLEUCUS* (Vieill.) : Temm. Pl. Col. 79.

One example of this bird is also in the Norwich Museum. Transmitted by Mr. Skinner.

- ✓ 261. *THRASAËTUS HARPYIA* (Linn.).

Transmitted by Mr. Skinner from the Vera Paz. Many stories of the boldness of the Harpy, in its depredations on their pigs, are told by the Indians; but most of them with such evident exaggeration, that the truth is difficult to arrive at.

- ✓ 262. *URUBITINGA ZONURA* (Shaw). *Falco urubitinga*, Gm. :
Slater, P. Z. S. 1858, p. 128.

This bird is found throughout the whole country, on the Pacific, at Dueñas, and in the Vera Paz, from which latter district examples have been forwarded by Mr. Skinner. It would appear, however, to be an inhabitant of the hotter, rather than the temperate region, as its occurrence in the central district is not frequent.

- ✓ 263. URUBITINGA ANTHRACINA (Nitzsch) : Sclater, P. Z. S. 1858, p. 129.

Transmitted by Mr. Skinner. Two immature birds of this species were shot by Salvin at Punta Arenas, in the Gulf of Nicoya, on the Pacific coast of Costa Rica. The stomachs of both these birds contained fragments of small crustacea. Mr. Leyland obtained examples of this bird in the vicinity of Omoa.

- ✓ ✓ 264. URUBITINGA — ?

Several skins of a *Urubitinga* in an immature state of plumage have at different times been transmitted by Mr. Skinner. One of these, in the Norwich Museum, shows a few feathers indicating that the adult is of the usual dark colouring of this group. Until lately, Mr. Gurney referred it to the South American *U. schistacea*; but, on closer comparison, he now concludes that it differs specifically from that bird, and belongs to a species whose adult plumage is as yet unknown.

- ✓ 265. URUBITINGA UNICINCTA (Temm.) : Pl. Col. 313. *Craxirex unicinctus*, Baird, Rep. p. 46. (N. A.)

In the Norwich Museum. Transmitted by Mr. Skinner.

- ✓ 266. BUTEOGALLUS NIGRICOLLIS (Lath.) : Strickl. Orn. Syn. p. 43.

About the forest-swamps of the low district in the neighbourhood of the village of Santana Mixtan, this species occurs. Here it is not uncommon, and may be seen sitting on a dead stump or branch of a tree, uttering occasionally its harsh monotonous cry. From the stomach of one shot in the above locality were taken the scales of some species of fish, which, with the strong smell of the claws, left no doubt as to the nature of its food.

Subfam. BUTEONINÆ.

267. BUTEO INSIGNATUS, Cassin, B. of Cal. pp. 102 et 198, pl. 31. (N. A.)

We have Mr. Gurney's authority for ascribing a single specimen shot by Salvin at Dueñas to this curious species. It appears to be rare in that district as elsewhere, as no others were observed, and none of the collections forwarded by Mr. Skinner have contained examples.

263. San Geronimo.

✓ 264 = Asturina plagiata, Schl. (cf. exom.t.)

= A. plagiata var. ^{Sp. exom. t.}
180

268. San Geronimo.

269 San Geronimo Iris yellowish gray: cere greenish-yellow: legs yellow.

270 Santa Rosa above Salamina.

272. Skins note, etc. in Brunnimattre B. allicaudatus. There is however a much-worn specimen of B. albonotatus in the Museum of the Soc. Econ. Etinanth.



273. Taken from a fresh q. shot at Savana grande
Sept. 1873. Legs & feet yellow. Stomach contains
remains of a small mammal or a lizard.

274 Savana grande. Sept. 1873. San Geronimo. Escuinilla.

275 = A. ruficauda. San Geronimo.

- ✓ 268. BUTEO BOREALIS (Gm.). (N. A.)

This species seems to be generally and plentifully distributed; and numerous examples in all stages of plumage, from the young to the adult, have been transmitted by Mr. Skinner. It occurs also at Dueñas.

- ✓ 269. BUTEO HARLANI (Aud.)? (N. A.)

A Buzzard, which Salvin refers to this species, was seen by him at Dueñas, but is by no means common. See Mr. Gurney's views on this bird in P. Z. S. 1857, p. 210.

- ✓ 270. BUTEO PENNSYLVANICUS (Wils.). (N. A.)

Transmitted by Mr. Skinner.

- ✓ 271. BUTEO ZONOCERCUS, Selater, P. Z. S. 1858, p. 130.

The only example known of this *Buteo* was transmitted from Guatemala by Mr. Skinner, and is now in the Norwich Museum.

- ✓ 272. BUTEO ALBONOTATUS, Kaup, Isis, 1847, p. 399.

The southern slope of the Cordillera appears to be the true habitat of this species, but even here it cannot be said to be common. Like many of its class, it is a feeder on beetles and locusts.

- ✓ 273. BUTEO GHIESBREGHTII, Du Bus, Esq. Orn. pl. 1.

This magnificent species occurs not unfrequently throughout the Pacific coast-region, where it is well known to the natives. It appears to be confined to that district, as no examples have been procured by the many collectors that have traversed the corresponding region on the Atlantic.

- ✓ 274. ASTURINA NITIDA (Lath.): Temm. Pl. Col. 87 et 294.

Though abundant in the hot country on both coast-regions of the Republic of Guatemala, this bird does not occur in the temperate region. Its food consists of Lizards; and, as appears to be the case with all Hawks selecting such food, the flesh is very rank.

- ✓ 275. ASTURINA MAGNIROSTRIS (Gm.): Pl. Enl. 464.

Like the last, this bird is confined in its range to the hot coast regions, where it is abundant. Its food comprises small reptiles, centipedes and locusts.

✓ 276. *ASTURINA BRACHYURA* (Vieill.). *Buteo brachyurus*, Vieill. Nouv. Dict. iv. p. 477; Pucheran, R. Z. 1850, p. 86. *Asturina albifrons*, Kaup, Isis, 1847, p. 200, et Contr. Orn. 1850, p. 67.

One specimen of this fine species, transmitted by Mr. Skinner, is now in the Norwich Museum.

Subfam. ACCIPITRINÆ.

✓ 277. *GERANOSPIZA CÆRULESCENS* (Vieill.). *Sparvius cærulescens*, Vieill. Nouv. Dict. x. 318. *Falco gracilis* et *Falco hemidactylus*, Temm. Pl. Col. 91 et 3. *Ischnosceles niger*, Du Bus, Esq. Orn. pl. 16.

The best authorities now seem to be agreed that there is only one species of this form. As that occurs in Southern Mexico as well as in South America, there can be no doubt of its also being found in Guatemala.

✓ 278. *MICRASTUR GILVICOLLIS* (Vieill.). *Sparvius gilvicollis*, Vieill. *Micrastur concentricus*, auct.

Transmitted by Mr. Skinner.

✓ 279. *MICRASTUR RUFICOLLIS* (Vieill.). *Sparvius ruficollis*, Vieill. *Falco xanthothorax*, Temm. Pl. Col. 92.

A skin of this bird received from Mr. Skinner is in Salvin's collection.

✓ 280. *MICRASTUR SEMITORQUATUS* (Vieill.). *Sparvius semitorquatus*, Vieill. *Falco brachypterus*, Temm. Pl. Col. 116, 141. *Falco percontator*, Cabot, Boston Journ. iv. 462.

Examples of this species have been transmitted by Mr. Skinner. Dr. Cabot observed it in Yucatan.

✓ 281. *ACCIPITER FUSCUS* (Gm.). (N. A.)

This species occurs rarely in the Pacific coast-region. Examples also have been transmitted from Vera Paz.

✓ 282. *ACCIPITER ERYTHROCNEMIS*, Kaup, Jard. Contr. Orn. 1850, p. 64.

Transmitted by Mr. Skinner. *Nisus chionogaster*, Kaup (P. Z. S. 1851, p. 41), from Coban, is probably nothing more than this species.

279 This is only the young of the former sp. which should be called M. querilla, Caosim.

280. Savana Grande. Sep: 1873.

281 "Chinacooch" (Cobanero) Occiputes generally "Cooch"

282 = A. chinogaster, Kp. being a sp. distinct from A. erythroceneus.

285. San Agustín Feb. 1874.

286. San Jerónimo. "Klik-Klik" (Cobanero) Escuinitla.

287. = H. fasciatus, Lawt.

Subfam. FALCONINÆ.

- ✓ 283. *FALCO ANATUM*, Bp. (N. A.)

A single example of this bird, in an immature state of plumage, was shot at Dueñas in February, 1858.

- ✓ 284. *HYPOTRIORCHIS FEMORALIS* (Temm.). *Falco femoralis*, Temm. Pl. Col. 121 et 343.

Transmitted by Mr. Skinner.

- ✓ 285. *HYPOTRIORCHIS RUFIGULARIS* (Daud.): Strickl. Orn. Syn. p. 88.

Transmitted by Mr. Skinner.

- ✓ 286. *TINNUNCULUS SPARVERIUS* (Linn.). (N. A.)

This is a very abundant species over the whole republic of Guatemala; but at Dueñas it is migratory, being a visitant there only during the winter months. The name applied to this species by the Spaniards is 'Klis-klis.'

- ✓ 287. *HARPAGUS BIDENTATUS* (Lath.): Temm. Pl. Col. 38 et 228.

Transmitted by Mr. Skinner.

Subfam. MILVINÆ.

- ✓ 288. *CYMINDIS CAYENNENSIS* (Gm.).

The Norwich Museum contains an example of this species from Honduras. Mr. Leyland met with it in the S. Pedro Mountains.

- ✓ 289. *CYMINDIS UNCIINATUS* (Temm.), Pl. Col. 103, 104 et 115.

Transmitted by Mr. Skinner.

- ✓ 290. *ROSTRHAMUS SOCIABILIS* (Vieill.).

Salvin ascribes the immense flights of hawks seen by him in the month of March in the Pacific coast-region, migrating in a north-westerly direction, to this species. The bird is well known to the Spaniards under the name of the 'Asacuani,' and the term has become proverbial for a person who is constantly wandering from place to place. Mr. Leyland procured a single specimen of this bird near the Lake of Peten.

- ✓ 291. **ELANUS LEUCURUS** (Vieill.). (N. A.)
Transmitted by Mr. Skinner.
- ✓ 292. **ICTINIA PLUMBEA** (Vieill.). (N. A.)
The Norwich Museum contains an example of this species from Honduras.
- ✓ 293. **ELANOIDES FURCATUS** (Vieill.). (N. A.)
Examples from the neighbourhood of Cajabon have recently been forwarded by Mr. Skinner; one of these is in the immature plumage, and shows a white edging to the feathers of the wing-coverts. If accounts are correct, this bird is more numerous at Belize, where it is also said to breed.

Subfam. CIRCINÆ.

- ✓ 294. **CIRCUS HUDSONICUS** (Linn.). (N. A.)
This is a migratory species at Dueñas, and probably throughout the whole country. During the winter months two or three females, or immature birds, generally frequented the Lake, the adult males being much less commonly seen. It occurs in the Pacific coast-region; and examples have also been transmitted from the Vera Paz.

Fam. III. STRIGIDÆ.

- ✓ { 295. **GLAUCIDIUM INFUSCATUM** (Temm.). *Strix passerinoides*, Temm. Pl. Col. 344.
A single example of this little Owl was shot by Salvin near the village of Laguna, one day's journey from Guatemala. This species has frequently been included in the collections transmitted by Mr. Skinner.
- ✓ 296. **GLAUCIDIUM JARDINII**, Bp. *Phalænopsis jardinii*, Bp. Compt. Rend. xli. 654 (?).
The Norwich Museum contains an Owl, transmitted by Mr. Skinner, which seems to belong to this species.
- ✓ 297. **SCOPS MC CALLII**, Cassin, Birds of Califor. p. 180 (?).
A specimen received from Mr. Skinner, in the Norwich Museum, seems to agree very well with the example of this bird from Mexico, as referred to in P. Z. S. 1858, p. 296.

293. "Shalamha" (Cobanero) .

294 San Geronimo : Quetzaltenango. Ixapa.
"Takcooch" (Cobanero). .

295. ♂ = G. phalangoides, Vieill.

296. ♂

Sp. ix V de Fuego, 9 Oct. 1873. Iris clear straw yellow, Core bluish, toes yellow.
Long. tot. abd. cauda 4.0 — San Geronimo.

v. 298. = S. brasiliensis.

Nyctale — sp. In a small collection of birds made by Dr. Valentin Escobar in the neighbourhood of Neuquén, I found (July 17 1873) a motley specimen of a species of this genus. It was quite young in the N. Kirki plumage i.e. brown all over with white eyebrows. I suspect it to be the western bird N. richardsoni but it may be N. harrisi with which I am but imperfectly acquainted. —

299. Lophotrix richlandi.

Slopes of the V. de Agua.

Near San Diego. 11 Oct. 1873.

Long. tot. along. cauda 9.0 in.



300. = S. fulviventer, Sol. & Salv. V. de Fuego alt. 7-8000 ft. Iris dark. In fact toes yellow.

301. Calderas, V. de Fuego. Sep. 1873. Iris dark. ♀ Food coleoptera.

✓ ✓ 298. Scops — ?

Though a skin from Cajabou seems to present some features that might entitle it to be considered as a distinct species, yet so much obscurity exists with respect to these Owls, that to give new names tends only to increase the confusion. The species to which it is most nearly allied are *Scops usta*, Selater, P. Z. S. 1858, p. 132, and *S. brasiliensis*, from the former of which it differs in having the ears less conspicuous, and in wanting the deep rufous tinge that pervades the whole plumage of that bird. It also has a light marking over the eye which is wanting in *S. usta*. From the latter it differs in its general tone of colouring, the breast being lighter and the back richer and more rufous. More examples will be necessary, to trace the changes of its plumage, before entering upon its claims to be held as a really distinct species.

✓ 299. LOPHOSTRIX STRICKLANDI, Selat. et Salv. *Scops cristata*, Daud., var., Strickl., Contr. Orn. 1848, p. 60, pl. 10.

The late Mr. Strickland has, in his usual accurate manner, pointed out the characters which distinguish this Central American bird from its prototype of Cayenne. He was acquainted only with one example, from which his figure was taken. Mr. Skinner having lately transmitted three examples of this bird from the Vera Paz, all of which agree in the distinctions given by Mr. Strickland, we cannot avoid considering it as entitled to specific rank. The most obvious differences are the absence of the white on the forehead, the blackish ear-coverts, and the much more distinct markings on the wings in the present bird.

✓ 300. SYRNIUM NEBULOSUM (Forster): Baird's Rep. p. 56.
(N. A.)

The Norwich Museum contains examples of this Owl transmitted by Mr. Skinner from Cajabon, where it appears to breed, as one of the specimens is in the downy plumage of the young bird.

301. SYRNIUM VIRGATUM, Cassin, P. Z. S. 1856, p. 285.

Numerous examples of this species have been transmitted by Mr. Skinner.

302. **SYRNIUM PERSPICILLATUM** (Lath.), Strickl. Orn. Syn. p. 193.

The hotel-keeper at Escuintla had in June last a bird in the immature plumage of this species; and the collection of Don Vicente Constancia in Antigua Guatemala contains a similar one.

303. **STRIX PRATINCOLA**, Bp., Strickl. Orn. Syn. p. 179. (N.A.)
Transmitted by Mr. Skinner.

Ordo III. COLUMBÆ.

Fam. COLUMBIDÆ.

304. **COLUMBA RUFINA**, Temm. Pig. t. 24; Bp. Conspl. ii. p. 52.

Three or four Pigeons were seen on the banks in the trees, when ascending the Rio Dulce in the middle of December. One only was secured, which proved to be a female of this species in very fine plumage. We are not aware that its occurrence so far north has been previously noticed.

305. **COLUMBA LEUCOCEPHALA**, Linn.

Inhabits the Keys, or small islands, on the coast of Honduras (Leyland).

306. **COLUMBA SPECIOSA**, Gm.

Near Lake Peten (Leyland).

307. **LEPTOPTILA ALBIFRONS**, Bp. Conspl. ii. p. 74. *Peristera brachyptera*, Gray, MS.

This is a very abundant species at Dueñas, where it is seen under or in the lower parts of the trees. It occurs generally in pairs, and is resident all the year.

308. **PERISTERA CINEREA** (Temm.).

Omoa (Leyland).

309. **ZENAIDURA CAROLINENSIS** (Linn.): Bp. Conspl. ii. p. 84. (N. A.)

Also very abundant about Dueñas, but inhabits the open districts. It usually congregates in flocks, and is resident.

302. Pulsatrix torquata. -

304. Saouchis Bp. 1915.

305. Glover's Reef.

306. Saklik, Poten.

307. Long. tot. abg. cauda 7.6.

San Geronimo & Pacif. coast.
Estuaria.

add. Pristera mondetoura, Bp. V de Fuego near Calderas alt. 7000 ft.
a male sp. brought by Julian Medio 9 Oct. 1873. — Iris reddish orange,
bill black, tarsus & toes dull red, claws black. Long. tot. abg. cauda. 5.3 —

309. San Geronimo.



307

310. San Geronimo. Between Escuintla and San José.

311. San Geronimo. The bare skin round the eye in
this sp. is blue the legs often red.

313 San Geronimo. "Mukui" (Cobanero)

314. Craugastor glolicera. "Chak-moot" (Coban Indians)

315. "Puh" (Cobanero).

✓ 310. SCARDAFELLA INCA, Bp.

Found in flocks with *Chamæpelia rufipennis*, near S. Pedro and Peten, Honduras (Leyland).

✓ 311. ZENAIDA LEUCOPTERA (Linn.) : Bp. Cons. p. 81. (N. A.)

Omoa (Leyland). One of the common Doves about Dueñas in April and May. It is found on the ground in the open savannahs.

✓ 312. CHAMÆPELIA RUFIPENNIS, Bp. [Cons. ii. p. 359 : P. Z. S. 1858, p. 859.]

Obtained by Capt. Taylor at Comayagua, Honduras.

✓ 313. CHAMÆPELIA PASSERINA (Linn.).

This is one of the most familiar birds of the central region, where it is the only small Ground-dove found. In the coast-regions its place is supplied by two other species at least. At Dueñas it is abundant, residing all the year, and breeding in the cochineal-plantations, where it deposits its eggs, two in number, on the ground under the rows of 'Nopal.'

The Spanish name for this species is 'Tortolita.'

Ordo V. GALLINÆ.

Fam. I. CRACIDÆ.

Subfam. CRACINÆ.

✓ 314. CRAX ALECTOR, Linn.

In the forests of both coast-regions this species occurs, though somewhat sparingly. It is usually seen in the early morning, or in the evening, perched on a branch of a tree, where it rests, looking at a passer-by with a vacant rather than an alarmed expression. When thus found, a sportsman may approach in the most open manner to within gun-shot. To the Spaniards it is known as the 'Pahuil,' and to the mahogany-cutters of Belize as the 'Curassow.'

Subfam. PENELOPINÆ.

✓ 315. PENELOPE PURPURASCENS, Wagler.

This bird frequents the same localities as *Crax alector*; and the habits of the two closely resemble each other; but *P. purpu-*

rascens is much more numerous, and occurs abundantly in many parts. It is said to build in trees. The Spanish name is 'Pavo,' which is translated as 'Turkey' by some, and 'Peacock' by other writers on Central America.

✓ 316. **PENELOPE NIGRA**, Fraser, P. Z. S. 1850, p. 246, pl. xxix.
In the British Museum. Transmitted by Mr. Skinner.

✓ 317. **ORTALIDA VETULA** (Wagler). *Penelope vetula*, Wagl. Isis, 1830, p. 1112; Moore in P. Z. S. 1859, p. 62.

Transmitted by Mr. Skinner. In Sir William Jardine's collection. Birds of this genus are common in both the coast-regions, and known by the name of 'Chacha.' They inhabit the forests, and are always seen on the trees.

✓ 318. **ORTALIDA LEUCOGASTRA** (Gould). *Penelope albiventer*, Less. Rev. Zool. 1842, p. 174 (nec Wagl.). *Penelope leucogastra*, Gould, P. Z. S. 1843, p. 105; Gould, Voy. Sulphur, Zool. p. 48, pl. xxxi.

This Guan is very abundant in the Pacific coast-region, where, in the neighbourhood of the more remote and smaller villages, the woods in the early morning resound with its loud continued cries. Like *Penelope purpurascens*, it is usually seen in trees, and shows little symptom of alarm on one approaching. The time of breeding seems to extend over some period, as young birds and fresh eggs were observed simultaneously in the month of March. The former appear to run almost immediately on becoming free from the shell, and, clinging to the branches of the underwood, are nimble in eluding capture. The nest is usually placed in a low bush, and is composed entirely of small twigs. The eggs, two in number, are of rough texture, and in colour pure creamy-white; they measure 1·25 in., diam. 1·5 in.

Subfam. OREOPHASIDINÆ.

✓ 319. **OREOPHASIS DERBIANUS**, Gray & Mitch. Gen. of Birds, pl. 121: *O. fronticornis*, V. d. Hoeven.

This bird, one of the most curious as well as the most interesting in Central America, is extremely rare, and its range, as far as is at present known, circumscribed within very narrow limits. The single volcanic peak 'el Volcán de Fuego' is generally said



316. *Pipulopina rufa*.
V. de Atitlán Jan³ 1874.
V. de Tucson, Sept. 1873.

V. de Atitlán Jan³ 1874.
"Kyo" of Coban & elsewhere.

317. *Gzabal*. I saw one sp. & heard others in the Valley of
the Rio Grande grande between Rodeo & Laosal. Year: 1874.
"Kakatzok" (Cobanero).

319 My shooter Julian Medio of Duruas told me that he
once procured two specimens of this bird from the V. de ~~Huayna~~^{Atitlán}.
Mr. Stague told me that one was brought to him from
the mountains of Santa Cruz (Chilasco) above San Jerónimo
Vira Paz. Don Juan Rodríguez has also received specimens
from Vira Paz. ^{He} sent him by a correspondent in San
Pedro Carcha. I have since ascertained from the
correspondent in question that this bird was shot in

The mountains of Rebak above Chicamaw where
the Quetzal shooters of Coban have of late years
made expeditions. These mountains form part
of the Chiantla range and are of great altitude.
The range is really a strong spur from the cordillera
forming the N.E. boundary of the head of the
Rio Negro. It is separated from Alta Vera Paz by
the R. Negro itself.

to be its sole "habitat," though there is strong reason to believe that the specimens procured by Mr. Skinner were obtained from the neighbouring mountain, 'el Volcan de Agua.' From careful inquiries made at Dueñas of Indians who were acquainted with the bird, it would appear that the belt of forest which encircles each of these volcanos between the elevations of 7000 and 11,000 feet above the sea-level is its natural home, where it is constantly resident. The characteristic tree of this forest-region is the celebrated Hand-plant of the Mexicans (*Chirostemon platanoïdes*)—'la Mano del Mico' (the Monkey's Hand) of the Spaniards, which there grows luxuriantly. Whether or not the *Oreophasis* occurs in the volcanos of Atitlan and the Altos, remains yet to be investigated; but, as all these and also the smaller cone of Pacaya present corresponding physical features to those of Agua and Fuego, it is not at all improbable that it may also be found in these mountains.

There appears to be no distinctive name for this bird; among the natives, however, it is known as the Turkey with the red head ('el Pavo con la cabeza colorada').

Fam. II. PHASIANIDÆ.

✓ 320. MELEAGRIS OCCELLATA, Temm. Pl. Col. 112.

This Turkey seems entirely confined in its range to the country included between the base of the Great Cordillera and the Atlantic, of which the promontory of Yucatan occupies the greater portion. From all accounts, the little-known district, of which the Lake of Peten forms the chief feature, is its headquarters; and there it would appear to be of not unfrequent occurrence. It seems almost unknown to the natives of the Republic of Guatemala; but the inhabitants of Belize, who have connection with the mahogany-cuttings, have more or less information respecting it. The Spanish name is 'Pavo real,' or, more properly, 'Pavo real del monte' (Wild Turkey).

Fam. III. PERDICIDÆ.

✓ 321. ORTYX NIGRIGULARIS, Gould, Mon. Odont. pl. 4.

Yucatan (Cabot) : pine-ridges of Belize (Leyland).

- ✓ 322. *ORTYX LEYLANDI*, Moore, P. Z. S. 1859, p. 62.
Honduras between Omoa and Comayagua (Leyland).
- ✓ 323. *CYRTONYX OCCELLATUS*, Gould, Mon. Odont. pl. 8.
Guatemala (Gould).
- ✓ 324. *DENDROTYX LEUCOPHRYS*, Gould, Mon. Odont. pl. 21.
Received direct from Coban (Gould).
- ✓ 325. *ODONTOPHORUS GUTTATUS*, Gould, Mon. Odont. pl. 28.
Obtained by Mr. Dyson in the Coban palm-ridges, and in
Yucatan.

Fam. IV. TINAMIDÆ.

- ✓ ♂ 326. *TINAMUS MAJOR*, Gm. ?: Moore, P. Z. S. 1859, p. 63.
Belize and Omoa (Leyland).
- ✓ 327. *TINAMUS CINNAMOMEUS* (Less.) : R. Z. 1842, p. 210.
Vicinity of La Union, S. Salvador (Lesson).

Ordo VI. GRALLÆ.

Fam. I. ARDEIDÆ.

- ✓ 328. *GARZETTA CANDIDISSIMA* (Gm.) : Baird, Rep. p. 665.
(N. A.)
Common on the Atlantic coast, and sometimes visits the Lake
of Dueñas. Generally seen in companies.
- ✓ 329. *HERODIAS EGRETTA* (Gm.) : Baird, Rep. p. 666. (N. A.)
Also common, but more solitary in its habits, both on the
Pacific and Atlantic coasts.
- ✓ 330. *ARDEA HERODIAS* (Linn.). (N. A.)
Occurs at Dueñas; seen fishing in the river Guacalate.
- ✓ 331. *FLORIDA CÆRULEA* (Linn.) : Baird, Rep. p. 671; P. Z. S.
1859, p. 63. (N. A.)
Specimens transmitted by Mr. Skinner are labelled "Coban."
Leyland found it common near Omoa.
- ✓ ♂ 332. *TIGRISOMA TIGRINUM* (Gm.).
Obtained at Tigré Island, on the Pacific coast of Honduras,
by Mr. G. C. Taylor.

323. Guazaltenango Sep. 1862. Calderas Oct. 1873. Codorniz.

324. Guaychoco.

325. Cologuin, Medio Monte.

326 = T. robustus, Sch.

326a. & head of adult.

Gerrisita candidissima.

Lake of Petén, Sep. 1873.

Yzabal 19 June 1859.

Sakikil (Cobanense).



330. San Jeronimo.

331. Rio Nagualate near El Idolo. Janst 1874.

332 = T. cabanisi, Arine.

333. San Geronimo. "Holz" (Cobanero)

5. 337. = Σ. major

340. San Geronimo. Zucaltlánango. Feb. 1874
"Achibalon" (Cobanero).

- ✓ 333. BUTORIDES VIRESSENS (Linn.). (N. A.)

Quite common on all the rivers on the coast among the mangrove swamps.

- ✓ 334. NYCTICORAX GARDENI (Gm.). (N. A.)

A young bird of this species has been transmitted by Mr. Skinner. Omoa and Peten (Leyland).

Fam. II. ARAMIDÆ.

- ✓ 335. ARAMUS HOLOSTICTUS (Cab.), Journ. f. Orn. 1856, p. 426. *A. scolopaceus* ?, Moore, P. Z. S. 1859, p. 64.
Belize and Omoa (Leyland).

Fam. III. CANCROMIDÆ.

- ✓ 336. CANCROMA COCHLEARIA, Linn.

Occurs in the forest-swamps on the Pacific coast not uncommonly. Skins have also been transmitted by Mr. Skinner from the Atlantic coast-region.

Fam. IV. EURYPYGIDÆ.

- ✓ ✓ 337. EURYPYGA HELIAS (Pall.).

Mr. Skinner has transmitted skins of this bird, which seem quite identical with S. American specimens.

Fam. V. TANTALIDÆ.

- ✓ 338. TANTALUS LOCULATOR, Linn. (N. A.)

This bird is not uncommonly seen about the large rivers in the forests of the Pacific coast-region. It is known by the Spanish name 'Acatras.'

Fam. VI. CHARADRIIDÆ.

- ✓ 339. CHARADRIUS VIRGINICUS, Borck. (N. A.)

About the second week in April, a few of these birds made their appearance at Dueñas in the open pasture land. They were always found in company with a flock of Bartram's Sandpiper.

- ✓ 340. ÆGIALITIS VOCIFERUS (Linn.). (N. A.)

During the winter months a flock of these Plovers frequent

the open land near Dueñas, sometimes feeding in the Cochineal plantations between the rows of Nopal. Omoa (Leyland).

- ✓ 341. *HOPLOPTERUS CAYANUS* (Lath.): Moore in P. Z. S. 1859, p. 63.
Honduras (Leyland).

Fam. VII. HÆMATOPODIDÆ.

- ✓ 342. *HÆMATOPUS PALLIATUS*, Temm. (N. A.)
Oyster-eatchers were seen at the mouth of the Nagualate on the Pacific, probably referable to this species.

Fam. VIII. RECURVIROSTRIDÆ.

- ✓ 343. *HIMANTOPUS NIGRICOLLIS*, Vieill. (N. A.)
A specimen of this bird is in the collection of Don Vicente Constancia of La Antigua Guatemala; procured near the modern city.

Fam. IX. SCOLOPACIDÆ.

- ✓ 344. *GALLINAGO** — ? —
This seems to be the common Snipe of Guatemala, and, like the rest of its genus, frequents the swampy spots, and especially the pools formed during the rainy season. It is very abundant in the months of October and November about the plateau on which the city of Guatemala stands. At Dueñas it occurs in considerable numbers in February and March, about the narrow belt of swampy land that surrounds the lake on nearly all sides. When put up, they seldom fly far, but alight again 50 or 100 yards off. They are by no means shy, but admit of one approaching to within easy shooting-distance before taking wing.

On excellent authority it is stated that in this same locality there occurs, but very rarely, a dark-coloured Snipe resembling the present bird in all respects but colour. Can this be the *G. sabini* of this species?

- ✓ 345. *GALLINAGO WILSONI*, Bp.: Moore, P. Z. S. 1859, p. 64.
(N. A.)

Common at Omoa (Leyland).

* We have not yet been able to identify this Snipe, which appears certainly distinct from *G. wilsoni*.

v. 344 = g. wilsoni. Dueñas, San Jeronimo.
"Chäk" (Cobanero)

353. San Geronimo.

- ✓ 346. TRINGA MACULATA, Vieill. : Baird's Rep. p. 720. (N. A.)
 About the beginning of April, and towards the end of the dry season, a great part of the stream is diverted from the river Guacalate, and thrown on the open pasture-land near Dueñas. During this period numbers of *Scolopacide* frequent the inundated part, of which *Tringa maculata* is the most abundant. At this season this bird, taking its food from fresh water, proves excellent eating.
- ✓ 347. TRINGA WILSONII, Nuttall : Baird's Rep. p. 721. (N. A.)
 About the mouth of the river Nagualate, on the shore of the Pacific, this bird occurs in some numbers in the month of March.
- ✓ 348. CALIDRIS ARENARIA (Linn.). (N. A.)
 Like the last, occurs on the Pacific, where it is abundant in some parts.
- ✓ 349. EREUNETES PETRIFICATUS, Ill. *Tringa semipalmata*, Wils. : Baird's Rep. p. 724. (N. A.)
 A single bird of this species was shot near Dueñas in the month of April, from amongst a flock of *Tringa pectoralis*.
- ✓ 350. MICROPALAMA HIMANTOPUS (Bp.) : Baird's Rep. p. 726. (N. A.)
 One individual, the only one seen, was shot, like the last, from amongst a flock of *Tringa pectoralis* in April.
- ✓ 351. GAMBETTA MELANOLEUCA (Gm.) : Baird's Rep. p. 731. (N. A.)
 This species seems more solitary in its habits than many of the other Sandpipers. Seldom more than one individual is seen at once; it also prefers the lake-sides to the marshy resort of the other species.
- ✓ 352. GAMBETTA FLAVIPES (Gm.) : Baird's Rep. p. 732. (N. A.)
 A small flock of these birds used to be in company with the *Tringa pectoralis* at Dueñas during the early part of the month of April.
- ✓ 353. RHYACOPINUS SOLITARIUS (Wils.) : Baird's Rep. p. 733. (N. A.)
 Transmitted by Mr. Skinner.

- ✓ 354. *TRINGOIDES MACULARIUS* (Linn.) : Baird's Rep. p. 735.
(N. A.)

About most of the rivers this species is to be met with during the winter months ; but they are principally in the unspotted, immature state of plumage. Their range is wide, and includes both the table-land and the coast country.

- ✓ 355. *LIMOSA FEDOA* (Linn.) : Baird's Rep. p. 740; P. Z. S. 1859, p. 64. (N. A.)

Common at Belize, according to Leyland.

- ✓ 356. *ACTITURUS BARTRAMIUS* (Wils.) : Baird's Rep. p. 737.
(N. A.)

A flock consisting of about eighteen or twenty members arrive about the beginning of April at Dueñas. There seeking the dry open savannahs rather than the marshy pools, they fully justify the appellation of the Field-Plover. To the *Charadriidae* their actions and habits closely assimilate them.

Fam. X. RALLIDÆ.

Subfam. RALLINÆ.

- ✓ 357. *PORZANA CAROLINA* (Linn.) : Baird, Rep. p. 749. (N. A.)
This Rail is the only one occurring about the Lake of Dueñas, where it would appear to be migratory, leaving that district on the approach of summer.

Mr. Skinner has also transmitted specimens from the Vera Paz.

- ✓ 358. *CORETHRURA CAYENNENSIS*, Gm. (?) : Moore, P. Z. S. 1859, p. 64.

Omoa (Leyland).

- ✓ 359. *ARAMIDES CAYENNENSIS* (Gm.) : Moore, P. Z. S. 1859, p. 64.

Omoa ; not common (Leyland).

Subfam. FULICINÆ.

- ✓ 360. *PORPHYRIO MARTINICA*, Linn. : Moore, P. Z. S. 1859, p. 64; Baird, Rep. p. 753. (N. A.)

Lagoons near Peten (Leyland).

361. *FULICA AMERICANA* (Gm.) : Baird, Rep. p. 751. (N. A.)
Transmitted by Mr. Skinner. Coots are abundant on the

354. San Geronimo.

355. Common at Chiapas.

357 "Shululah" (Cobanero)

361. "Tzikha" of the Coban Indians.

366. San Geronimo.

368. San Geronimo. "Ok-ok" (Cobauero)

Lake of Dueñas; but, as specimens have not been collected, they cannot be referred with certainty to this species.

Subfam. PARRINÆ.

- ✓ 362. PARRA GYMNSTOMA, Wagler. *Parra cordifera*, Less.: Des Murs, Icon. Orn. pl. 42.

Very common at Belize and Peten; less so at Omoa (Leyland). Observed by Salvin in the Pacific coast-region near Santana Mixtan, and obtained by Capt. C. L. Wyke on the Lake of Amatitlan in the central region.

Ordo VII. ANSERES.

Fam. I. ANATIDÆ.

- ✓ 363. DENDROCYGNA AUTUMNALIS (Linu.): Baird, Rep. p. 770. (N. A.)

Shot by Mr. G. C. Taylor on the Lake of Yojoa, Honduras.

- ✓ 364. DAFLA ACUTA (Linn.): Baird, Rep. p. 776. (N. A.)

Seen at Belize in December, and common, during the winter, on the Lake of Dueñas. It departs northward in March.

- ✓ 365. QUERQUEDULA CAROLINENSIS (Gm.): Baird, Rep. p. 777. (N. A.)

Aloor River, Honduras (Leyland).

- ✓ 366. QUERQUEDULA DISCORS (Linn.): Baird, Rep. p. 779. (N. A.)

Common in winter on the Lake of Dueñas, but disappears in March. Also seen at Santana Mixtan, Pacific coast-region.

- ✓ 367. SPATULA CLYPEATA (Linn.): Baird, Rep. p. 781. (N. A.)

Like the two preceding, inhabits the Lake of Dueñas during the winter, and departs towards the end of March.

- ✓ 368. MARECA AMERICANA (Gm.): Baird, Rep. p. 783. (N. A.)

Common on the Lake of Atitlau, where it was seen in May 1858, and also observed near the village of Laguna, about a day's journey from Guatemala.

369. FULIGULA AFFINITIS, Eyton: Baird, Rep. p. 791. (N. A.)
Excessively abundant on the Lake of Dueñas in the winter

months, and seen on the Lake Atitlan as late as the month of May.

✓ 370. *CAIRINA MOSCHATA* (Linn.).

All the domestic varieties in Central America seem to derive their origin from this species. It is found abundantly on both coasts, frequenting the forest swamps. At Belize it is a well-known bird, as the nature of that district is well adapted to its habits. In the Pacific coast-region it is more local, as the swamps are much more limited, and are of comparatively small extent. The bird is more frequently seen sitting on a branch of a tree than in any other position. During the day-time it remains in the forest; but towards evening it seeks the fields of maize, and many may be seen sitting about the surrounding trees, the flock at a distance looking like a troop of Black Vultures (*Cathartes atratus*). Though shy and by no means easy of approach, a sportsman has no difficulty in obtaining two or three birds between sun-down and dark, by hiding up amongst the trees and shooting as the birds fly round over head. The flesh is excellent and very tender. This bird is said to breed in December.

✓ 371. *ERISMATURA RUBIDA* (Wils.): Baird, Rep. p. 811. (N.A.)

On the Lake of Dueñas this is the only resident species of Duck. Its numbers diminish during the period of the spring migration, the immature birds at that time probably seeking other quarters. It is a bird more easily procured than any of the other ducks frequenting the lake, as its powers of flight render its escape less easy. Not but that it flies as well as any other when once fairly started; but it finds difficulty in rising from off the water, so much so, that, by sailing down wind towards a bird, it usually admits of approach to within easy shooting-distance. Sometimes, however, it seeks safety by diving; and when such is the case, its powers in this respect are so great that escape is almost certain to ensue. It builds in May, amongst the reeds on the margin of the lake, making a nest of the dead flag with a little down. The eggs are, as might be expected, by analogy with those of the European *Erismatura mersa*, rough in texture, but perhaps hardly in such a degree as

371 Lake of Atitlau.

374. Lagoons of Huamuchal.

375 Rio Dulce.

376. Lakes of Yzabal.

the eggs of that species. They are of a dirty creamy-white colour, and measure, axis 2 inches $4\frac{1}{2}$ lines, diam. 1 inch 10 lines; but are sometimes rather more elongated, as others measure, axis 2 inches 7 lines, diam. 1 inch $9\frac{1}{2}$ lines.

Fam. II. LARIDÆ.

- ✓ 372. *CHROICOCEPHALUS ATRICILLA* (Linn.) : Baird's Rep. p. 850. (N. A.)

Common about Belize, and said to breed in the Keys along the coast.

- ✓ 373. *ANOUS STOLIDUS* (Linn.) : Baird, Rep. p. 864. (N. A.) Observed on the Pacific coast.

Fam. III. PELECANIDÆ.

- ✓ 374. *PELECANUS ERYTHRORHYNCHUS* (Gm.) : Baird, Rep. p. 868. (N. A.)

Transmitted by Mr. Skinner, having been obtained on the Pacific coast.

- ✓ 375. *PELECANUS FUSCUS* (Linn.) : Baird, Rep. p. 870. (N. A.) Seen on the Atlantic coast, and found breeding by Mr. G. C. Taylor in the Bay of Fonseca, on the Pacific.

- ✓ 376. *PHALACROCORAX MEXICANUS* (Brandt) : Baird, Rep. p. 879. (N. A.) Lake of Peten (Leyland).

- ✓ 377. *SULA FIBER* (Linn.) : Baird, Rep. p. 872. (N. A.) One of these birds came on board the steamer, off the coast of San Salvador.

Fam. IV. PLOTIDÆ.

- ✓ 378. *PLOTUS ANHINGA*, Linn. : Baird, Rep. p. 883. (N. A.) Found at Lake Peten, by Leyland.

Fam. V. TACHYPETIDÆ.

- ✓ 379. *TACHYPETES AQUILA* (Linn.) : Baird, Rep. p. 873. (N. A.) Observed on both coasts. Mr. G. C. Taylor obtained eggs of this bird in the Bay of Fonseca in 1858. See P. Z. S. 1858, p. 318, and 'Ibis,' No. II. (*anteà*, p. 150).

Fam. VI. COLYMBIDÆ.

380. *PODILYMBUS PODICEPS* (Linn.). (N. A.)

This is a resident species at Dueñas. It breeds in May, making a nest amongst the reeds of the lake, consisting of a pile of flags heaped up so as just to raise the edge of the structure above the surfacee. The eggs are generally half-immersed. They are from two to four in number, and are of a chalky exterior on an under surfacee of bluish green ; they measure, axis 1 inch $6\frac{1}{2}$ lines, diam. 1 ineh 1 line.

381. *PODICEPS* — ?

A small Grebe is common on the Lake of Dueñas ; but specimens have not yet been obtained. Its general appearance and habits are much the same as in the European *P. minor*, but it is smaller in size.

Fam. VII. HELIORNITHIDÆ.

382. *HELIORNIS FULICA*, Bodd.

Inhabits the Pacific coast, being found in the submerged swamps underneath the trees. The only specimen obtained was swimming in the water, near the village of Santana Mixtan.

In concluding our list, we beg to acknowledge the assistance we have received from Mr. Gould in determining the *Trochilidæ*, and from Mr. Gurney in making out the species of *Accipitres*. Although we have enumerated 382 birds as occurring in Central America, the catalogue is still in many particulars very incomplete, and we have no doubt that future researches will make great additions to it.

XXIV.—*List of a Collection of Birds from the colony of Natal in South-eastern Africa.* By J. H. GURNEY, M.P., F.Z.S.

(Plate VII.)

The following is a list of a series of Birds of Prey, Goatsuckers, Kingfishers, Cuckoos, and Water-birds recently received by me from the colony of Natal, to which I have added the names of a few species belonging to the same groups from two other collections made in the same country.

v. 381 = P. dominicus, "Yumun-ok-ok." (Cobanero)

382. Belize River 24 Ap. 1862.



Gould, however, in the 'Supplement to the Birds of Australia,' states his opinion that it is "not a Bird of Paradise, if we regard *Paradisea apoda* and *P. papuana* as typical examples of that group, but very closely allied to *Ptilorhis*,—so nearly so, indeed, as scarcely to be separable from that form." Now, I am not so fortunate as to be able to agree entirely with either of these authorities, considering, as I do, that the present bird is somewhat intermediate in its characters between *Cicinnurus* and *Ptilorhis*, and that it is more nearly allied to both of these forms than to the true *Paradisea*, though I think it probable that all three genera really belong to the same natural family. In the narrow and elongated form of the nostrils, and their concealment by short, stiff, upstanding frontal plumes which advance far beyond the openings, *Semioptera* agrees more closely with *Cicinnurus*. In *Ptilorhis* the nostrils are barely covered by the frontal feathers. In *Paradisea* the nasal opening is rounded, and quite uncovered in front. Again, the *acrotarsia* of *Semioptera*, which consist of one smooth undivided scute, are very different from those of *Ptilorhis*, which are divided into five or six scutes; and they more nearly resemble those of *Cicinnurus*. The legs are also much stronger, thicker, and longer than in *Ptilorhis*, and in this respect are more like those of *Paradisea*. The wing-feathers of the new form are not so much broadened as in *Ptilorhis*, nor are the secondaries so much elongated; but in these respects it is equally unlike *Cicinnurus*. The general conformation of the wings of the three species is not essentially different. It may not be out of place to give comparative measurements of these three birds.

	Long. tota.	Alæ.	Caudæ.	Tarsi.	Rostrum a rictu.
<i>Semioptera wallacii</i>	10·5	5·8	2·7	1·6	1·7
<i>Ptilorhis paradisea</i>	12·0	6·1	3·8	1·3	2·1
<i>Cicinnurus regius</i>	6·5	4·5	1·6	1·1	1·2

On the whole, therefore, it will be reasonable to consider *Semioptera* as a very distinct genus; and I must be allowed to express some surprise that Mr. Gould should have spoken of it as "scarcely separable" from *Ptilorhis*. The two very singularly elongated feathers which spring from the base of the upper

wing-coverts and extend beyond the primaries, not to speak of other differences, are, in my opinion, sufficient to distinguish it.

So much for *Semioptera wallacii*. It must have been with much regret that Mr. Wallace left Bateian without obtaining the second and finer species of the form which is said to exist there. Mr. Wallaee's notes on the habits and living appearance of this singular bird are not yet arrived. They may probably guide us to some more certain conclusion as to its natural affinities. In the mean time those who wish to become better acquainted with its strange appearance, and to form their own judgment on the subject, have only to pay a visit to the British Museum. There, in the Bird-gallery, they will find two nicely-prepared square glass cases, in which a complete series of each of the Paradise-birds* obtained by Mr. Wallace is beautifully mounted and arranged.

V.—*Contributions to the Ornithology of Guatemala.* By OSBERT

Ibis 1860. Jan.

SALVIN and PHILIP LUTLEY SCLATER.

(Plate III.)

[MR. OSBERT SALVIN'S first collection of birds from Guatemala having arrived, I have carefully examined them, and to the best of my ability determined the species. I now give a list of such of them as were not mentioned in our joint article on the Ornithology of Central America in last year's volume, together with the whole of Salvin's notes, whether relating to these birds or to others included in our first catalogue.

I have also taken this opportunity to insert in their proper places several birds well ascertained to inhabit Guatemala which were not mentioned in the former list. The total addition thus made to the number of the birds of Central America amounts to 35 species.

It will be understood that the whole of the field-notes in this article are from Salvin's pen, while I am responsible for the

* The Great Paradise-bird (*Paradisea apoda*) from the Aru Islands; the Lesser (*P. papuana*) from Havre Dorey, New Guinea; and the King (*Cicinnurus regius*) from the Aru Islands.



5. V. de Fuego, Coban, Tactic, choctum.

determination of the species and remarks on the nomenclature and geographical distribution.—P.L.S.]

Fam. TURDIDÆ.

- ✓ 1. *Turdus rufitorques*, Hartl., sp. 4*.

Dueñas. Proceeding from Dueñas towards Alotenango, this Thrush is common, but on the northern side of the road from Ciudad Vieja to Dueñas I have never once seen it. This seems strange, as it may be met with abundantly, almost within shot of the road, on the southern side.

- ✓ 2. *Catharus melpomene* (Cab.), sp. 7.

Dueñas, July 23. Though hardly so sweet as that of the Robin of Europe (*Erythacus rubecula*), the notes of this bird bear no faint resemblance to those of our familiar songster. Towards evening it may frequently be heard in the wooded spots near Dueñas; but, owing to its shy habits and the thickness of the underwood to which it resorts, it is seldom seen. The eyes, bill, and eyelids of this bird are of an orange hue tending towards vermillion.

- ✓ 3. *Melanotis hypoleucus*, Hartl., sp. 12.

Coban and Dueñas. A young bird (obtained July 23rd) in nestling plumage; is of a uniform dull blackish, with the white feathers beginning to develop themselves on the breast and belly.—P. L. S.

Fam. SYLVIIDÆ.

- ✓ 4. *Sialia wilsoni* (Sw.), sp. 14.

Coban and Dueñas. "Resident all the year at Dueñas."—
O. S.

Fam. TROGLODYTIDÆ.

- ✓ 5. *CAMPYLORHYNCUS ZONATUS* (Less.): Cent. Zool. p. 70.

Dueñas, July 18th. This bird is not found quite so low down as Dueñas; but on ascending a short distance, it is common. It is always found in companies of eight or ten, or even more, frequenting the upper parts of the forest. Its cry is loud

* These numbers refer to those of the article in vol. i. of 'The Ibis.' The names of the species now added to the list are printed in capitals.

and incessant, but partakes little of the character of that of a Wren. In its flight indeed it shows some affinity to these birds, but hardly in any other respect. A nest of this species, to which I ascended, was composed chiefly of dried vegetable matter, including dried flowers. It was a large loose structure, about fifteen inches in depth and twelve in diameter, placed in a fork of one of the upper branches of a tree, and had a side entrance near the top. It contained neither eggs nor young; but before ascending I saw one of the birds pass in and out several times.

—O. S.

A well-known Mexican species, occurring in MM. Sallé's and de Oea's collections from Vera Cruz, but not previously known from Guatemala.—P. L. S.

✓ 6. *Cistothorus elegans*, Selat. et Salv., sp. 18.

I constantly see several pairs of this Wren frequenting a few spots on the lake of Dueñas. I have been unable to discover the nest, but, as the young are not yet flying about, I may still succeed this season.

✓ 7. *SALPINCTES OBSOLETUS* (Say) : Bp. Conspl. p. 224. Vera Paz (Skinner). In Mr. Gould's collection.

✓ 8. *THRYOTHORUS MACULIPECTUS*, Lafr., Rev. Zool. 1845, p. 338. Vera Paz (Skinner). In Mr. Gould's collection.

✓ 9. *THRYOTHORUS PLEUROSTICTUS*, Selater, sp. nov.

Umbrino-brunneus, remigibus extus et cauda tota nigro transfasciatis; superciliis a fronte ad nucham distinctis et corpore subtus albis: lateribus a cervice et crasso nigro late transvittatis: rostri plumbi mandibulae inferioris basi albida: pedibus pallide corylinis: long. tota 5·2, alae 2·2, caudæ 1·8, rostri a rictu 85, tarsi 9.

Hab. in prov. Veræ Pacis, reipubl. Guatemalensis.

Mus. P. L. S.

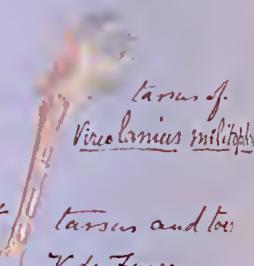
An example of this pretty Wren in my collection was kindly presented to me by Mr. Gould, by whom it was received from Vera Paz through Mr. Skinner. The species is a true *Thryothorus*, allied to *T. rufalbus*, *T. albicularis*, &c., but easily distinguishable by its pure white colouring below, broadly and regularly banded with black all down the sides.

7. Quetzaltenango Feb: 1874. Hills around plain of Salamá
Cuesta of Cachíl, Rabinal, Ixchel, Jutiapa, Conchagua.
8. Choctum, Cahabon & San Luis, Savana grande.
9. La Unión (?) Vde Conchagua.

10. Gucuas, Coban.

11. Common about Calderas, V. de Fuego Aug: & Sep. 1873 (alt. 6-8000 ft)
Coban.

13. ex Calderas, 12 Sep: 1873. Ibis, greenish white tarsus and toe
flesh colour. Long. tot. abdg: caudas 4.5. V. de Fuego.
(Coban locality doubtful)



Fam. MNIOTILTIDÆ.

- ✓ 10. HELMINTHOPHAGA PEREGRINA (Wils.) : Baird, Rep. p. 258.
Coban. In winter (or immature ?) dress.
- ✓ 11. BASILEUTERUS BELLI (Giraud) : *Muscicapa belli*, Giraud, B. Texas. *Basileuterus chrysophrys*, Bp. Consp. p. 314: Sclater, P. Z. S. 1857, p. 202.
Coban. Previously known from Mexico.

Fam. VIREONIDÆ.

- ✓ 12. VIREO SOLITARIUS (Wils.) : Baird, Rep. p. 340.
Coban.
- ✓ 13. VIREOLANIUS MELITOPHRYNS, DuBus : Bp. Consp. p. 330: Sclat. P. Z. S. 1857, p. 213.
Coban. This is the first example of this beautiful bird that I have seen from Guatemala. It is scarce in Mexican collections, one example only having been obtained by M. Botteri, and one by Señor R. M. de Oca.

Fam. HIRUNDINIDÆ.

14. COTYLE FULVIPENNIS, Sclater, P. Z. S. 1859, p. 364.
Dueñas, July 17th, 1859. At this season of the year this Swallow is common on the open lands and flying about the lake.—O. S.
Recently described from a single specimen in Señor de Oca's collection from Jalapa.—P. L. S.

Fam. AMPELIDÆ.

15. *Ptilogonyx cinereus* (Sw.), sp. 59.

Coban and Volcan de Fuego.

In the Volcan de Fuego, at an elevation of 6000 feet above the sea-level, I found this bird abundant in the early part of July. In its manner of taking its food it much resembles a Tyrant-bird (*Tyrannus*), but, besides seizing insects in the air, hops about the branches, apparently in search of other prey.

Fam. CÆREBIDÆ.

- ✓ 16. *Chlorophanes atricapilla* (Vieill.), sp. 62.

On comparing Guatemalan specimens of this bird with others from Trinidæd, New Granada, the Upper Amazon, and Cayenne, I do not find differences sufficient for the establishment of specific separation.

- ✓ 17. *CÆREBA CARNEIPES*, Selater, P. Z. S. 1859, p. 376.

One specimen only obtained, July 9th : a young male assuming the adult dress.

Fam. TANAGRIDÆ.

- ✓ 18. *PITYLUS POLIOGASTER*, Dubus.

Coban.

Originally described from Guatemalan specimens, but also occurring in Southern Mexico.

- ✓ 19. *ARREMON AURANTIROSTRIS*, Lafr.

Coban.

- ✓ 20. *Phœnicothraupis rubicoides* (Lafr.), sp. 70.

Yzabal (June) ♀.

- ✓ 21. *CHLOROSPINGUS OPHTHALMICUS* (DuBus).

Coban.

- ✓ 22. *PYRANGA BIDENTATA*, Sw.

Volean de Fuego, alt. 5500 ft.

- ✓ 23. *Ramphocelus passerinii* (Bp.), sp. 76.

This magnificent Tanager is far from uncommon about the edges of the forest near Yzabal. The neighbourhood of the Campo Santo seems to be a favourite locality. I know of no bird that shows itself so brilliantly as it flies from bush to bush. At Yzabal it is commonly known as the *Arrozero*, or Rice-bird. The twenty-one birds collected at Yzabal prove, I think, that the immediate coast has been comparatively neglected by collectors, and that the series forwarded from Coban and other parts of the department of Vera Paz do not include many interesting species produced by the districts lying further eastward. Of the twelve species procured at Yzabal, only three occur in a

77. Escuintla, Lanquin, Choctum, Dueñas, Coban
Retalhuleu. -
18. Choctum &c (not Coban)
19. Choctum &c (not so high as Coban)
21. V. de Fuego. Ridge above Calderas, Nov. 1873. San Geromino

27 Choctaw.

28 Choctaw. -

collection formed at Coban, which contains over 100 species. This surprised me more at first than it does now that I have become more acquainted with the local distribution of the species. Yesterday (August 14th) I shot, on the Volcan de Fuego, an hour-and-a-half's ride from Dueñas, eight species of birds, of which seven were new to my collection. Yet this includes 250 species, among which are all but one or two of the common birds observed about Dueñas.

✓ 24. *Tanagra diaconus*, Less., sp. 78.

Dueñas, July 3rd. This is the first time I have noticed this bird at Dueñas. It is common on some parts of the coast.

✓ 25. *Calliste larvata*, Du Bus, sp. 80.

In the forest surrounding Yzabal this *Calliste* is commonly met with in the month of June, the neighbourhood of the Campo Santo being the locality in which I found it most abundant. The first morning that I went out I fancied that I saw it, but did not succeed in shooting a specimen. However, to make sure I was not mistaken, I remained another day, and succeeded in obtaining three specimens, and saw others. I found them usually in the open parts of the forest, flying about and hopping from tree to tree in pairs. I noticed nothing peculiar in their cry. It was feeble, but partook of a Fringilline character. From the perfect state of the plumage and the size of the eggs in the ovary, I am led to suppose that, late in the season as it was, no incubation had taken place.

✓ 26. *Euphonia affinis* (Less.), sp. 82.

Dueñas, July 4. This bird is numerous now, but escaped my observation last year. I usually find it feeding on the fruit of a tree called the 'Amate.'

Fam. FRINGILLIDÆ.

✓ 27. *SPERMOPHILA CORVINA*, Sclater, P. Z. S. 1859, p. 379.

Common about Yzabal. No. 227.

✓ 28. *GUIRACA CONCRETA* (Du Bus.), Bull. Ac. Brux. xxii.

p. 150: Sclat. P. Z. S. 1856, p. 302.

Yzabal, June 21. Only one specimen (no. 235), seen sitting

on a branch when shot. Hitherto known only from southern Mexico.

✓ 29. *Haemophila rufescens* (Sw.), sp. 96.

Dueñas (July 18), no. 288.

✓ 30. *Chrysomitis mexicana* (Sw.), sp. 99.

Is common everywhere about Dueñas. I found it on my arrival. Last year I did not meet with it.—O. S.

Fam. ICTERIDÆ.

✓ 31. *Sturnella hippocrepis*, sp. 101.

Dueñas, July 8th. "Still to be met with not uncommonly." —O. S.

✓ 32. *Cassiculus prevosti*, sp. 104.

Dueñas, July 3rd. "Also observed at Yzabal."—O. S.

✓ 33. *Icterus MESOMELAS*, Wagler, Isis, 1829, p. 755: Selater, P. Z. S., 1856, p. 301.

Three immature specimens from Coban seem referable to this species, of which I have specimens from Mexico and New Grenada. One from Dueñas (July 25th) is also immature.—P. L. S.

✓ 34. *Icterus affinis*, Lawrence: sp. 112.

In various states of plumage yellow, chestnut, and in transition from Dueñas and Coban.—"Is now (July) numerous about the willow-trees. I am quite satisfied that all these specimens belong to the same species, though I somewhat hesitated about adopting that conclusion at first. The first time I saw this bird at Dueñas was July 17th."—O. S.

✓ 35. *Molothrus AENEUS* (Wagl.): Selater, P. Z. S. 1856, p. 300.

A male, but not quite in full plumage, if identical with the Mexican bird, and requiring further comparison. "A very common species about Dueñas."—O. S.

Fam. CORVIDÆ.

36. *Corvus cacalotl*, Wagl.?, sp. 114.

"At this season (the middle of August) this Raven is abundant about the plains of Dueñas. A few days ago I shot four,

33. Escuintla, Coban, Chocten & Road to San Luis.

33.v. This is really the young I. wagleri.

35. Dueñas, San Jeronimo Retalulen, Huamuchal.

41. Slopes of Cerro de Zunil, Las Nubes, Feb: 1874.
"Puh-sook (off sobau Indians)

v. 43 = G. pectoralis, Sel. v. Salvin.

wheras, last year, I never was within shot of one. The manners and habits of this bird are, as might have been expected, like those of *Corvus corax*.”—O. S.

The single specimen of this Raven sent is not in good condition. It is probably the bird called *Corvus cacalotl* by Baird (Rep. p. 563), if really different from *C. carnivorus*!—P. L. S.

[Fam. ANABATIDÆ.

- ✓ 37. *ANABATES CERVINIGULARIS*, Sclater, P. Z. S. 1856,
p. 288.
Coban. Known from Mexican collections.
- ✓ 38. *Synallaxis erythrothorax*, Sclater; sp. 123.
Yzabal, June 19. In the dense forest.
- ✓ 39. *Dendromanes anabatinus*, Sclater, P. Z. S. 1859, p. 54, pl.
cl. et p. 382 : sp. 126.
Coban.
- ✓ 40. *Sclerurus mexicanus*, Selater, sp. 129.
Coban. Quite identical with Mexican specimens: not with
Dr. Hartlaub's *S. guatemalensis*.
- ✓ 41. *DENDROORNIS ERYTHROPYGINA*, Selater, P. Z. S. 1859,
p. 366.
Coban.
- ✓ 42. *Picolaptes affinis*, Lafr. sp. 124.
Calderas, Volcan de Fuego, July 25th. Salvin is inclined to
think this different from *P. affinis*, which he obtained the year
before, 4000 feet lower down on the southern slope of the vol-
cano. It is certainly rather smaller than my Mexican speci-
mens, and the feet and bill are paler; but it is not quite mature,
and I should hesitate to consider it distinct. It was obtained in
the oak-forest.—P. L. S.
- ✓ 43. *GLYPHORHYNCHUS CUNEATUS* (Max.)?
Yzabal, June 19th. "Shot ascending a tree." The occur-
rence of this form here is novel and interesting. I doubt
whether there is more than one good species of the genus.—
P. L. S.

Fam. FORMICARIIDÆ.

- ✓ 44. *Cercomacra tyrannina*, Sclater, sp. 133.
Yzabal, June 21, mas juv. in bad plumage.

Fam. TYRANNIDÆ.

- ✓ 45. *EMPIDONAX BAIRDI*, Sclater, P. Z. S. 1858, p. 301.
Coban. Previously known from southern Mexico. See 'Ibis,' 1859, p. 442.

- ✓ 46. *ELAINIA SUBPAGANA*, sp. nov.

Cinerascenti-olivacea; pilei obscurioris, cristati plumis intus albis: alis caudaque nigricanti-fuscis, tectricibus alarum albido terminatis, secundariis olivascenti-albido stricte limbatis: subtus pallide flava, gutture cinerascenti-albo, pectore et lateribus eimeraceo indutis: rostro nigro, mandibulae inferioris basi flavida, pedibus obscure fuscis: long. tota 5·8, alæ 3·3, caudæ 3·1, tarsi 0·8.

Hab. in Guatemala.

Two examples of this bird were obtained by Salvin at Dueñas on July 31st. "In habits and cry this species is very like a *Myiarchus*; indeed for several days I mistook these very birds for *Myiarchus laurencii*, which is common here."—O. S.

The present species is certainly a typical *Elainia*, closely allied to *E. pagana* of South America, the type of the genus, but differing in its larger dimensions, more obscure plumage above, particularly upon the head, and purer grey throat.—P. L. S.

Fam. COTINGIDÆ.

- ✓ 47. *LIPAUGUS UNIRUFUS*, Sclater, P. Z. S. 1859, p. 385.
Coban. Described from Boucard's specimens from Oaxaca; previously sent by Mr. Skinner from Vera Paz.
- ✓ 48. *PACHYRHAMPHUS MAJOR* (Cab.): Sclater, P. Z. S. 1857, p. 78.
Coban.
- ✓ 49. *Pachyrhamphus* — ?
Coban. A bird of uniform rufous plumage, but with the second wing-primary shortened, as in the adult males of this

45. Calderas, N. de Fuego (Alt. 7,500 ft.). Sep. 1873.

48. Savana grande. Sep: 1873.

Si 53 = C. vauoxi. Common throughout the Costa Rican

subfamily. It is probably a young male of one of the black species—*P. polychopterus* or *P. nigriventris*.

50. *Manacus candæi* (Parz.), sp. 170.

Yzabal. (218.) This bird is not uncommon. It sits in the thick underwood, and is more frequently heard than seen. The cry it utters begins with a sharp note not unlike the crack of a whip. This is followed by a rattling sound not unlike the call of a landrail, from which, however, it differs in being continuous and not repeated.

Fam. CYPSELIDÆ.

51. *Hemiprocne zonaris* (Shaw), sp. 174.

Dueñas. "This month (August) these Swifts may be seen almost every day, but they usually fly high—far out of gunshot. Birds with the collar perfect appear about as numerous as those in the plumage of the present specimen" (with the collar defined behind, but hardly marked in front.)—O. S.

52. CHÆTURA RUTILA (Vieill.): *Hirundo rutila*, Vieill. Nouv. Dict. xiv. p. 528: Enc. Méth. p. 534: *Hirundo robini*, Less. Trait. d'Orn. p. 270: *Chætura brunneitorques*, Lafr. Rev. Zool. 1844, p. 81.

(Plate III. fig. 1 ♂, 2 ♀.)

"Dueñas, July 25th. On this day I observed a considerable number of these Swifts flying over the open land near the house. Those with the rufous collar proved on dissection to be males; those without, females. I therefore conclude that they belong to the same species."—O. S.

The occurrence of this beautiful Swift in Guatemala is of great interest. I have seen New-Grenadian specimens, but they are scarce. M. Robin is said to have discovered it in Trinidad, and his specimens, now in the Museum of the Jardin des Plantes, form the types of Vieillot's and Lesson's descriptions. See Pucheran in Rev. et Mag. de Zool. 1853, pp. 443, 445.

53. CHÆTURA — ?

Fuliginoso-nigricans, uropygio et caudæ tectricibus superioribus dilutioribus, pallide fuliginosis: subtus pallide fuliginosa,

guttura laetescenti-albo, ventre imo erissoque obscurioribus, nigricantioribus: rostro nigro, pedibus plumbis: long. tota 4·3, alæ 4·6, caudæ 2·4, tarsi 0·45.

Hab. in Mexico et Guatamala.

An imperfect specimen from Coban transmitted by Salvin seems to be referable to this species, of which I have taken the characters from two skins obtained by M. H. de Saussure in Mexieo. The bird is nearly allied to two South American species, *Chætura spinicauda* and *C. poliura*, but is immediately distinguishable by its pure white throat, passing into smoky brown on the belly. In *C. spinicauda* the throat is also whitish, but the belly is of a bluish ash-colour, and the uropygium is pale cinereous. In the present bird the uropygium and tail-coverts are of a pale smoky brown, like the belly.

It is probable that this Swift may be the *Chætura vauxi* (Baird, Report, p. 145) of Western North America, of which I have never seen specimens. It seems to agree with the figure of that bird, given in the 10th volume of the Pacific R. R. Reports, pl. 18.—P. L. S.

Fam. TROCHILIDÆ.

54. *Phaethornis adolphi*, Gould: sp. 177.

This is one of the commonest species of the family about Yzabal, and, I think, one of the most restless and active of them that I have yet met with. It searches the flowers growing from the ground to the height of about four or five feet.

55. *Campylopterus rufus* (Less.): sp. 178.

I saw only one example of this species at Dueñas last year. Now it is abundant in all parts, and instead of being one of the rarest is one of the most familiar species. There seems to be a slight difference in the notes of all the humming-birds that have come under my observation, which is more especially noticeable when several species frequent the same place. The call-note—if such it is—of *C. rufus* is very distinct from those of *Thaumastura henicura*, *Amazilia arsinoë*, and *Cyanomyia cyanocephala*, all of which are in their turn distinguishable one from another; but these differences, perceptible as they are to the ear, are not capable of being rendered intelligible in writing. It appears

A. Lovillii.



from dissection of specimens that the males only of this species have the remarkably strong shafts to the primaries, which are, I believe, peculiar to the genus *Campylopterus*. What habit pursued by the males and not by the females necessitates this strange feature?

The flowers of the Banana (*Musa*) are much resorted to by this bird.

56. *Cyanomyia cyanocephala*, sp. 183.

Last year in a cypress-tree near the house at Dueñas a pair of these birds built their nest. This year on looking I found a branch of the same tree similarly tenanted, the new nest being a few yards only from where it was last year. To get at it I was obliged to cut away the branch, and, though in falling the nest was quite thrown on its side, the eggs, much to my surprise, did not fall out. This I afterwards found was owing to the lip of the nest, which in its natural state turns in considerably. This last week another pair have been building somewhere near the house, and the male bird frequently comes while I am preparing skins in the corridor and takes pieces of cotton almost from under my hand. Yesterday afternoon (Aug. 14) Mr. Wyld caught it making a descent upon some small object in his room. He shut the window and called me. The intruder, who was wearied from fluttering against the window, suffered itself to be caught. In a very few moments its agitation ceased, and it seemed to be taking advantage of its comfortable place in my hand to rest from its fatigues, making no attempt to escape. Before letting it go I procured a piece of sugar, and dipping it in water put it to the tip of its bill. Almost immediately its long tongue was employed in sucking up the liquid. On liberating it, it flew to a tree close at hand, and seemed to take no further notice of its late captivity. If its nest is not finished, I have no doubt I shall soon see it again seeking the wool. The wind produced by the wings of these little birds is considerable, as I noticed that while hovering over a large piece of wool the whole surface of the wool was violently agitated. This same bird makes daily visits to the vases of flowers placed in the rooms.

✓ 57. *Delattria viridi-pallens*, sp. 188.

Occurs in company with *Petasophora thalassina* on the Volcan de Fuego.

✓ 58. *Thaumastura henicura*, sp. 191.

At Dueñas the females of this species are much more commonly to be seen than the males. Occasionally, when flying, the elongated tail-feathers are stretched to a considerable angle.

✓ 59. *Amazilia rieffeli*, sp. 198.✓ 60. *Amazilia arsinoë*, sp. 199.

Both common in the forest about Yzabal. *A. arsinoë* is also frequently met with about Dueñas. I never observed it last year. As I now find it in one of the spots which I then used to visit most frequently, I judge that it is a migrant.

✓ 61. *Thaumantias candidus*, sp. 200.

Common on the Atlantic coast-region, about Yzabal, and thence one day's ride into the interior.

✓ 62. *Chlorostilbon osberti*, Gould.

A pair of this species resort to the flowers about our house at Dueñas.

One specimen was shot on the Volcan de Fuego at an altitude of 5000 feet above the sea-level—the highest altitude at which I have yet observed it.

Fam. GALBULIDÆ.

✓ 63. *Galbula melanogenia*, Sclater: sp. 205.

Coban.

Fam. BUCCONIDÆ.

64. *Bucco DYSONI*, Sclater, P. Z. S. 1855, p. 193.

Coban. Discovered by Dyson in Honduras, and accidentally omitted from the former list.

65. *MALACOPTILA INORNATA*, Dubus, Bull. Acad. Brux. xiv. pt. 2, p. 107: Rev. Zool. 1848, p. 249.

Coban.

66. *MALACOPTILA VERÆ PACIS*, sp. nov.

Ferrugineo-rufa, uropygio et cauda unicoloribus, dorso et alarum tectricibus maculis triangularibus pallidius rufis et ad basin linea nigricante terminatis crebre aspersis; pilo canescen-

var. bo = *Q. devillii*.

tiore, maculis similibus minoribus variegato : frontis plumis et mystacibus elongatis albis : lateribus capitis pallido rufo striatis : subtus intensius ferruginea, ventre medio cinnamomescentiore : rostri nigri mandibula inferiore ad basin flavicante : pedibus pallidis : long. tota 7·5, alæ 3·4, caudæ 3·0, rostri a rictu 1·2.

Coban, one ex. There are examples of a *Malacoptila* in the collection of the Academy of Natural Sciences of Philadelphia, U. S. A., which, according to my notes, agree with this bird. They are marked as from Vera Paz. The nearest ally of the present species is Lafresnaye's *Malacoptila panamensis*, from which it may be distinguished by the absence of any flammulations below. It is also not generally unlike *M. mysticalis* of New Grenada, but is easily distinguished from it by its rufous tail.—P. L. S.

Fam. TROGONIDÆ.

67. *Trogon mexicanus*, Sw. sp. 215.

Volcan de Fuego. The colour of the eyelid of this species, both in the male and female, almost exactly corresponds with the red colour of the breast in each, that of the male being much more brilliant than that of the female, in fact bearing the same ratio to it as the colour of its breast to that of the female's breast. It is probable that in many cases the colour of the soft parts about the eye, &c., may be determined by reference to some portion or portions of the plumage where it is exactly represented. In the Trogons this seems eminently the case. A few days ago I shot a pair of *Trogon caligatus*, in which the colour of the eyelid of the male was exactly represented by the colour of the yellow breast ; that of the female by the fainter yellow of its breast. The same is the case with *T. puella*. I think, therefore, that with tolerable safety the eyelids of these American Trogons may be said to correspond with the colour of the breast. It certainly is true in all cases which I have noticed. As regards the theory itself, though of course there must be many exceptions, I may here state that the colour of bare skin round the eye of *Aulacorhamphus prasinus* is exactly repeated in the under-tail coverts, that of *Ramphastos carinatus* in the throat, the blue being repeated in the colour of the legs. This practice of re-

ferring the colours of the soft parts to the permanent colours of the plumage may occasionally be employed with great advantage.

On the 24th July Mr. Wyld and I set out for Calderas, a locality in the Volean de Fuego well known to my friend as a favourite resort of many birds not found in the lower districts. We started at six o'clock in the morning, intending to reach our destination at an early hour, but I found so much to attract attention on the road, that it was past noon ere we arrived at the haunts of the Quesal (*Pharomacrus paradiseus*), to obtain which was the chief object of our ride. Leaving Mr. Wyld to make a sketch of a magnificent isolated tree of the celebrated Hand-plant (*Chirostemon platanoïdes*), I struck up the mountain, keeping near to the edge of a deep ravine, or, as it is called here, "barraneo," to serve as my guide. What a contrast are these elevated forests to those of the coast! The lofty trees, it is true, correspond, but how different the vegetation, how different the climate! Instead of the incessant noise and buzzing of myriads of insects, insect life seems almost extinct, and a dead silence reigns, broken only by an occasional gust of wind. It is the region of mosses, and every tree, every branch is covered with clustering and pendent mosses*. Everything reeks with moisture, the sun being shut out from penetrating below by the closing tops of the trees. The soil in this region of perpetual damp is of the richest quality, its excellence being testified as well by the mouldering ranks of the fallen trees as by the luxuriant growth of a species of bamboo. It is no easy matter to ascend; the fallen trees and the dense jungle of bamboos render the path tortuous and difficult; "barraneos" too, innumerable sweep the mountain on all sides, rendering considerable care necessary to keep to the one chosen as the guide.

One would think that to ascend a mountain and descend again were easy enough, and so it is; but to return to the same place by the same road is another matter altogether. The forest entirely shuts out the view of the surrounding country, and consequently landmarks are not available. One ravine is exactly

* Are not these rather epiphytic *Tillandsiae*, belonging to the natural family *Bromeliaceæ*?—ED.

It's no!



like another : they begin and end almost without one being aware of it. Nothing is easier than to strike a fresh path and to take a new guiding "barranco," instead of the one first chosen.

A wide detour to reach the horses or a night passed in the forest may be the consequence of a mistake. From the commencement of the lofty trees one seems to be leaving the ornithological world, and few birds are to be seen or heard ; but the hour of our visit was ill-chosen, the morning and evening being the times when the feathered denizens of these forests show themselves in greater numbers. It was here, however, that I saw *Lamprolæma rhami*, and a little lower down *Selasphorus helioisæ*, two species of Humming-birds not easily matched for brilliancy, even by members of their own family. It was here that the first specimen of the *Oreophasis derbianus* was shot, Mr. Wyld being present on the occasion. Here occurs *Trogon mexicanus*, and last, but not least, *Pharomacrus paradiseus*, the emblem of royalty in the times of the old monarchy of Quiché. I was not fortunate enough to see this most brilliant of Trogons, but in the region here described it certainly does occur, though perhaps sparingly. I cannot speak accurately of the elevation of this forest, but, if I may hazard a conjecture, I should say that *Chirostemon platanoïdes* begins to replace the evergreen oaks at about 7000 feet above the sea-level, and that the forest where that tree forms the most marked feature extends to perhaps an elevation of 10,000 or 11,000 feet, it then being itself succeeded by pines.

Fam. CUCULIDÆ.

- ✓ 68. *Piaya thermophila*, Sclater, P. Z. S. 1859, p. 368: sp. 224.

Coban and Yzabal. This species has a wide climatic range. I have observed it at an elevation greater than that of Dueñas. The same remark applies to *Geococcyx affinis* and *Crotophaga sulcirostris*.

- ✓ 69. *Coccycus AMERICANUS* (Gm.) : Baird, Rep. p. 76. N. A.
Coban.

Fam. PICIDÆ.

- ✓ 70. *Centurus pucheranii* (Malh.) : sp. 235.

Coban and Yzabal.

✓ 71. *Chloronерpes yucatanensis*, sp. 239.

Cóban. Seems to agree with Mexican specimens.

Fam. PSITTACIDÆ.

✓ 72. *CONURUS HOLOCHLORUS*, Sclater, Ann. and Mag. N. H. (1859), ser. 3, vol. iv. p. 224.

Coban and Dueñas. This Parrot is known as 'El Chocoyo.' At this season it frequents the patches of Maizc (*Zea mais*), which cover the hill-sides, and commits serious damages on the crop. It may constantly be seen flying over the plains and low country at all hours of the day in flocks varying from two birds to twenty or thirty in number. When any large number fly together, they usually, I may say almost always, divide themselves into couples, though these do not preserve regular order like a flock of Geese.—O. S.

✓ 73. *Psittovius tovi* (Gm.).

Coban. This little Parrot extends into New Granada. I have seen examples from Cartagena, and it occurs in Bogota collections. It is readily distinguishable from its near ally *Psitt. jugularis*, of the Upper Amazon, by its pale yellow under-wing coverts.—P. L. S.

✓ 74. *CHRYSOTIS GUATEMALÆ*, Hartlaub, in Mus. Bremensi. *Chrysotis*, sp. 250, Sclat. et Salv. Ibis, 1859, p. 138.

Læte viridis: pilco cyanescente: primariorum parte terminali nigrieante: sceundariorum pogoniis externis ex magna parte coccineis, inde purpurascenibus: caudæ vitta lata terminali flavicante: rostro corneo, pedibus fuscis: long. tota 14·0, alæ 9·0, caudæ 4·5.

Hab. in Guatemala et Honduras.

Having observed a second specimen of this *Chrysotis* in the Bremen collection, I have been induced to describe it under the MS. name given to it by Dr. Hartlaub.—P. L. S.

Fam. FALCONIDÆ.

75. *Geranospiza cærulescens*, sp. 277.

Found in a forest of low trees near Ducñas. In the stomach were remains of a small mammal. Iris burnt-sienna, the outer portion being lighter-coloured: legs blood orange: cere black.

72. Plain of Salamá.

73. ♀ Coban. I have never seen another from Coban & as this sp.
was from V. Constantia the locality may be erroneous. It is common
on the Costa grande.

Mr. R. Swinhoe on the Ornithology of Amoy (China). 45

✓ 76. *Urubitinga anthracina*, sp. 263.

Dueñas, July, changing from immature to adult plumage.

Fam. COLUMBIDÆ.

✓ 77. *Chamæpelia passerina*: sp. 313.

I have found nests of this bird both on the ground and elevated a few feet above it.

✓ 78. *SCARDAFELLA INCA*, Bp. Conspl. ii. p. 85.

Dueñas, July 19th, ♂.

This is the first and only specimen I have met with of this Ground-dove at Dueñas. On the coast it is numerous, resembling in its habits the common species of this district, *Chamæpelia passerina*.

Fam. ARDEIDÆ.

✓ 79. *Butorides virescens*, sp. 333.

I have noticed two other species of Heron about the Lake of Dueñas, but this is the commonest.

Fam. RALLIDÆ.

✓ 80. *Fulica americana* (Gm.), sp. 361.

A young bird in its first dress. The Coot of the Lake of Dueñas appears to be the *F. americana*, after all, as I have noticed that the old bird has a spot of the colour of dried blood above the white frontal plate. In the young bird the bill is vermillion-red with a lighter spot next to the white point on the upper mandible. Over the eye is blue, the colour of the eye-ball evidently showing through. The legs are brown with a faint cast of green.—O. S.

VI.—*The Ornithology of Amoy (China)*. By ROBERT SWINHOE,
of H. M. Consular Service.

As I am about to leave Amoy for a place further down the coast, a short notice of the species of birds collected by me on this island and its immediate vicinity during a five years' sojourn would perhaps find an acceptable place in 'The Ibis.'

The position of Amoy and its relative bearings to the main-

land of China may be ascertained from any ordinary map; a few words will therefore suffice to explain the nature of the country in which I have followed my loved pursuit. This island, the neighbouring shores of the mainland, and the banks of both the rivers (the larger one leading to Changehow Foo and the smaller to Tunggan Hien), are all densely populated, and have remarkably little wood, except occasional Banyan-trees interspersed amidst the villages. The plains are well cultivated with rice, maize, sugar-cane, *Cucurbitaceæ*, and hemp, during summer, and during winter with bearded wheat, spinach (*Basella rubra*), taro, cabbage, &c. The hills are either composed chiefly of granite débris, studded with huge black blocks of granite, and extremely barren; or of clay, and covered with small stones and scanty herbage. This character of the country will probably account for the paucity of our resident species among *Land-birds* as compared with the occasional visitants or stragglers in the same group. The *Water-birds*, however, show a finer list, no doubt, owing to the suitable feeding-ground afforded them by the large mud-flat of the Amoy Creek, those of several other inlets and creeks into the mainland, and the marshes at the mouths of the rivers.

In identifying the following birds, Mr. Blyth of Calcutta has rendered me infinite service; indeed, without his valued aid, I could have done little among the non-European forms. I have also to thank Mr. Stevenson of Norwich for the help he has kindly afforded me.

1. BUTEO JAPONICUS, Bp.

A regular winter visitant, and often seen in pairs.

2. PANDION HALIAËTUS (L.)?

Lives on the rocks at the mouth of the harbour, and comes occasionally to Amoy; very shy and unapproachable. I have never been able to procure a specimen.

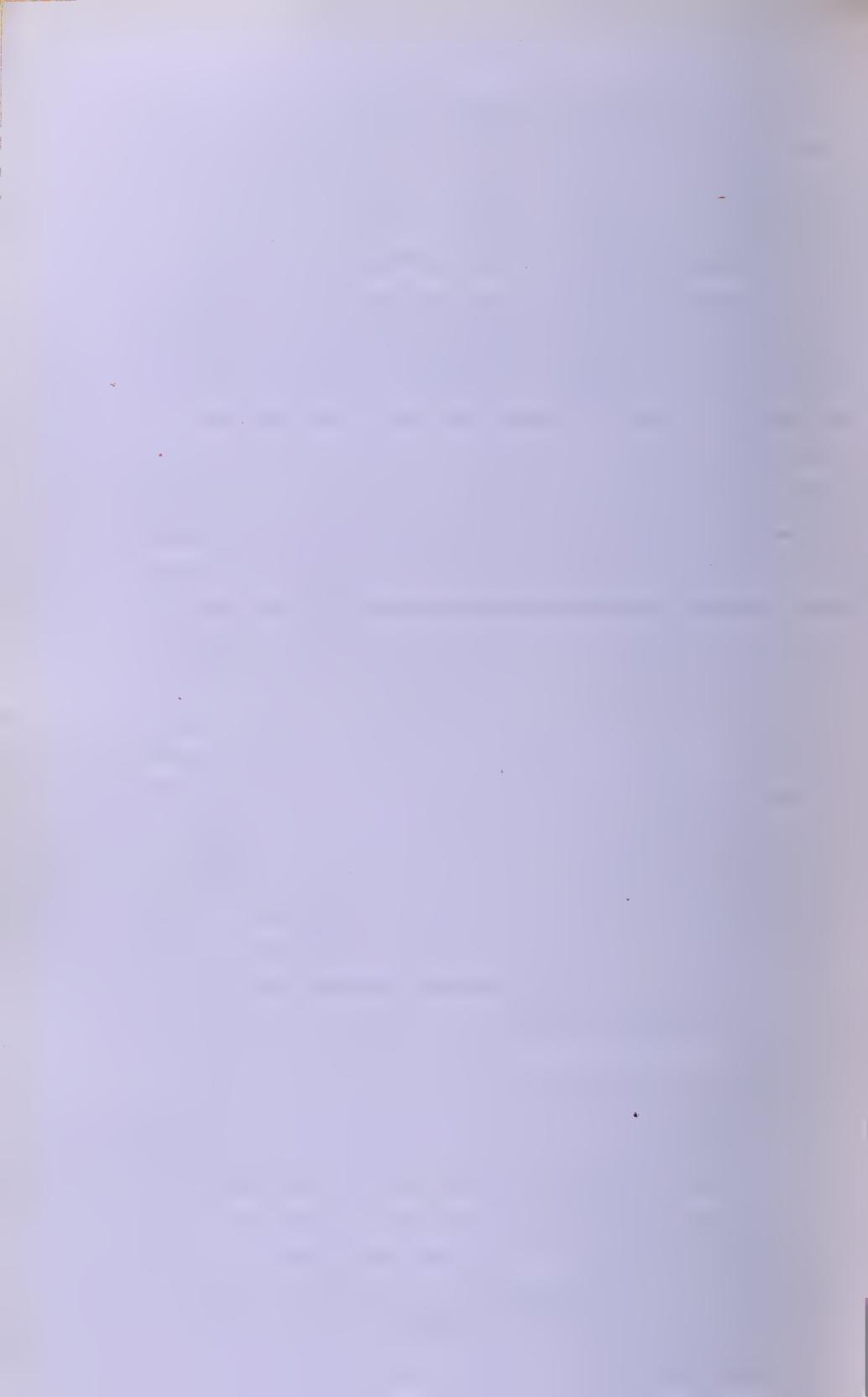
3. FALCO PEREGRINUS, Linn.

Breeds in the neighbourhood, on the high hill of Lamtaiboo, and is not unfrequently seen.

4. HYPOTRIORCHIS SUBBUTEO (L.).

Occasionally seen during winter; rare.





Mr. Blyth writes to us (from Calcutta, October 8th)—

" Among recent gatherings I have received *Paleornis erythrogenys*, nobis (*P. nicobaricus*, Gould), from Port Blair (Andamans). My name, however, will stand, as *erythrogenys* of Lesson = *longicauda* and *erythrogenys* of Fraser, is subsequent, and, moreover, in my opinion, refers to the genuine *P. barbatus*. Some time ago a fellow sold me a wholly black *Sturnopastor*, which he falsely stated was from Port Blair. The bird has now moulted into the ordinary plumage of *Sturnopastor contra*. Varieties of this bird are not very rare; and upon one of them Major Tytler founded his *St. moorii*. I am rather pleased to hear that I have a living specimen of my new *Kittacincla albiventris* now doing well at Port Blair. Our taxidermist employed there wishes to bring it with him himself when he returns, fearing to trust it to anybody else. I have offered him a good price for as many as he can procure for me alive, and am curious to hear the voice of this species, the Shámá (*K. macroura*) being, as you know, the prince of songsters in this part of the world. However, I have a Bhrim-ráj (*Edolius paradiseus*) which imitates the Shámá's song to such perfection that you cannot distinguish them apart. I formerly had another of the same species that did the same; but there is nothing that a good Bhrim-ráj will not imitate. I had one that imitated the crow of a cock to perfection, and would set all the cocks crowing within hearing, taking his turn with the rest most laughably. Every sound a fowl, a cat, a goat, or sheep can utter, the cry of a dog being whipped, the cawing of a crow, the whistling of scraps of tunes, and the song of the best singing birds, all these were repeated with marvellous accuracy by my Bhrim-ráj. In addition to all this, it is one of the most intelligent of birds (crow-like in this respect), and capable of strong attachment."

Besides a collection of birds, and valuable notes in this Number, several letters have been received from Mr. Salvin since our last issue, from which we give the following extracts:—

" Dueñas, August 30th.—I have now before me four very pretty skins of a Phalarope, which I shot upon the lake here a few days ago. The Snipe has not yet arrived, nor have the

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Ducks. Of Humming-birds I find 12 species here, but none, I fear, new. I cannot, however, complain of the ornithological productions of Dueñas, for I seldom go out with my gun without bringing back some addition to my collection. You would be astonished at the great variety of country concentrated within a narrow compass. The consequence of this is a very local distribution of species, and at the same time a great variety. Birds seem to assemble in the valleys and plains; and little is to be found either in the more dense forest or on the steep hill-sides. The Volcan de Fuego is one of my favourite resorts. Scarcely a week passes that I do not enjoy a ramble in its forests. The village of Dueñas is situated on the north side of a plain, which skirts the volcano on its eastern side. From it the volcano rises to a height of 10,000 feet, and to between 14,000 and 15,000 feet above the sea-level, the summit of it being divided into three peaks, from the most southern of which issues a constant column of smoke, which, though small, is always visible. Opposite to it is the Volcan de Agua, a very respectable hill with a single peak, which attains to nearly the same altitude as the Volcan de Fuego.

"I am adding greatly to my knowledge of the distribution of the birds of this country; and my theories as regards the inhabitants of the hot and cold regions frequently receive severe blows; in course of time I hope they will be replaced by others based on a surer footing. I find a Humming-bird common at Yzabal and Dueñas [probably *Amazilia arsinoë* is referred to (Ed.)]; another is common at Escuintla, on the Pacific coast and near the city of Guatemala. At the same time it appears that *Pyrrhula erythromelana*, *Chiroxiphia linearis*, and *Amazilia corallirostris* are all Pacific-coast species, and that none of them have as yet been met with in the Atlantic coast-region. *Cotinga amabilis* is, I strongly suspect, a bird of the high region. *Momotus lessoni* certainly is so, as also *Icterus giraudi*. So, you see, there is plenty to be done in the way of details, all of which require careful investigation."

"Dueñas, October 25th.—Tomorrow I start for San Gerónimo, Salamá, and Cobán. I have long had this expedition in my mind; for I am particularly anxious to see and find out where

A. devillei.

A. cinnamomea.

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all the Vera Paz collections have been made, and I now go under very favourable circumstances. Three days hence will take me to the hacienda of San Geronimo, belonging to an English company, and where an English gentleman, whose acquaintance I made a short time ago, is staying. He is now going to Coban, and has asked me to join him.

"Among birds I have lately got several that have pleased me much. The Volean de Fuego is a very fruitful locality, and I never go there without finding something fresh. I have shot this last month twenty-four species of *Mniotiltidae*, not including some which I obtained last year. My Phalaropes are not *Phalaropus wilsoni*, as I thought at first; but Constaneia has a skin of that species. There are therefore two Phalaropes which occur here."

Mr. G. D. Rowley writes from Brighton, as follows:—

"For some time past I have been aware of the existence of two kinds of Ringed Plover at Shoreham Harbour in this vicinity—a larger and a smaller. This circumstance is so conspicuous as to have attracted the attention of fowlers and others shooting; for on the wing the difference is very observable. I have now a fine stuffed specimen of each kind before me, both killed in the last week but one in August, this year, at Shoreham. The larger is *Charadrius hiaticula*; the smaller is no doubt *Charadrius minor*, the Little Ringed Plover. Independently of the marked difference in size, the black beak, much more slender legs and thighs, and general appearance, there is the black spot on the inner web of the outer tail-feathers of my small specimen.

"I should be curious to know if this British and real Little Ringed Plover corresponds with the foreign skins usually sold as those of that bird; I fancy not. Our *Charadrius minor* (of Shoreham) arrives in May, when the young of the other species are running about; and, as I strongly suspect, sometimes breeds here. The bird is not by any means so uncommon as represented by Yarrell. Mr. Swaysland, of the Queen's Road, always has some on hand. It again appears in autumn, after the spring migration.

"The migration of birds is a wonderful thing—wonderful even

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to the closet naturalist, but still more so to the field observer, little understood by any. Living on the south coast in spring and autumn, I have good opportunities of marking the arrival and departure of some birds. I have seen the Swallows (*Hirundo*), over the sea, actually arrive and pass straight inland without a pause or the least show of weariness. Not so the Chiff-chaffs and Willow-Wrens, which stay about the shingle at first, till they recover their strength—at least, I have seen them at five o'clock of a spring morning within a few yards of the waves. In autumn, on certain days (varying according to the wind), the gardens about Brighton are full of Ring-Ouzels, Chiff-chaffs, Willow-Wrens, Redstarts; on the Downs are Wheatears; in the air Goldfinches, Swallows, Green Linnets, &c. I have stood and watched these birds early on a fine morning (for birds of the above kinds do not fly in cloudy, dull days), going in continuous streams down to the sea, following one another as surely in the same direction as if going by a mariner's compass. The Roman augurs were not quite so absurd perhaps as one would at first imagine; a great many indications may be gathered from the flight of birds. Their motions appear to the common observer to be guided by chance; but the ornithologist knows that each bird he sees is employed on some particular business, and can interpret its actions. Birds always travel by night across the sea, working their way along the coast till a proper wind is blowing, and flying against any light which may appear on the shore. In the days of the old watchmen at Brighton, small birds used frequently to fly against the lanterns which they carried."

Herr August von Pelzeln, of Vienna, informs us that, among the collections formed during the late exploring expedition of the 'Novara,' which have recently arrived at the capital, are "large numbers of bird-skins. Among these are an interesting and tolerably numerous series from the Nicobar Islands, some rare birds from the smaller Pacific Islands, and many from India and the Sunda Islands. Among the latter is a species of Bonaparte's genus *Diardigallus*. The collection of skeletons and birds in spirits is of great value; and there are also a considerable number of nests and eggs."



until the end of December. His last letters (dated Panama, Jan. 6th & 15th) announced that he purposed leaving by the Central American mail of the 18th of that month to join Mr. Salvin in Guatemala.

Mr. Blyth in his last letters (dated Calcutta, Jan. 8th & 21st) speaks of an apparently new species of Cassowary (*Casuarius*) in the aviary of the Babu Rajendra Mullieck of Calcutta: "It has a yellow throat, a single yellow throat-wattle, and a long stripe of naked yellow skin down each side of the neck. In its present (first) plumage, it is of a much lighter colour than the young of the Common Cassowary of the same size, two of which are kept along with it; and from the size of the legs, it is easy to perceive that when full-grown it is a much smaller species."

The following extracts are from Mr. Osbert Salvin's last letters:—

"San Geronimo, Vera Paz,
Nov. 29th, 1859.

*Mrs.
1860*

"The day before yesterday I arrived here from Coban, having spent three weeks there altogether, during the whole of which time I was kept hard at work skinning. The whole number of skins I obtained reaches to 600, of which I prepared myself about 400. They were all shot near the town by the boys with their pea-shooters, and so dexterous are some of these young rascals, that they would, in one day, sometimes, bring me as many as fifty. I paid them at the rate of $1\frac{1}{2}d.$ a piece, but for larger birds, according to their size. I cannot now give you an exact summary of the collection, but I will just run through some of the best. In the first place, I found a man who had, among some common things, three *Cotingæ amabiles*, which of course I secured. If what they tell me is true, it would appear that this species makes a vertical migration, and is found in the summits of the hills about Coban during the months of January, February, and March; the other months it spends on the 'tierra caliente.' The skins I have just obtained are from the latter locality. Of Humming-birds I obtained sixteen species, one of

which I take to be new : it is a *Petasophora*; its general colour is brownish, and it has a gular stripe running down the throat of faint blue and green ; the ears are blue*. I have also obtained some good specimens of *Lophornis heleneæ*, which pleased me much ; the rest are common. I enclose a comparative list of the Humming-birds of Dueñas and Coban : when I have time, I mean to make out a similar list of the birds of the two places as complete as I can.

" A specimen of a *Penelope*, which was brought to me, appears to answer well with *P. niger* ; it is not at all rare in the mountains. An *Ortalida* is also found there. A female *Euphonia gouldi*, a fine specimen of *Botaurus lentiginosus*, a female *Gyparchus papa*, and several others which I do not know, form the best part of my collection. One of the very commonest birds about the town is *Elainia vilissima*. I also obtained three specimens of *E. placens*. I think, too, you will be rather pleased with the *Mniotiltidae* and *Vireones* ; but I hardly know with what amount of satisfaction you will receive the intelligence that I have certainly three, perhaps four, species of *Caprimulgidae*. At Coban the coast-species and those of the cold country are much mingled, and I think that after a very careful scrutiny the number of species exclusively belonging to one or the other will prove small in comparison. I wish you would look very carefully at a specimen marked in my collection *Trogon puella* from the Pacific Coast region. I cannot help feeling sure that it is not the same as the bird found in the mountains of Coban, which, as I am assured, is exclusively a bird of the cold region. The species of Coban has a black ring round the eye ; *Pharomacrus paradiseus* has the same ; so I am told by a man who has shot many. I should also like to know what is the colouring of the chin and lower parts of *Pteroglossus torquatus*, as I have a skin from the Rio Polochic which I fancy is different. I have set two men to work to collect for me in the coast-country, north of Coban, and I have great expectations that they will work well for me. I have made arrangements to return to Coban in January, when I hope to shoot some Quesals myself ; the bad weather and the quantity of work the small boys gave me to do prevented me

* It is *Petasophora delphinae*.—ED.



from penetrating into their localities this last visit. That I worked hard you can imagine, when I tell you that I skinned twenty-seven birds at a sitting. I leave shortly for Dueñas, when I shall set about arranging this collection and despatch it, as well as the birds I have now there, which amount to some 200. This place where I am now staying is situated at the western end of the plain of Salamá. The climate is hot, and consequently I find some 'tierra caliente' species; *Icterus gularis* is common; I have also *Ceryle amazona*, and a beautiful species of *Momotus**, of which I do not know the name. *Amazilia corallirostris* is also found, and an *Edicnemus*, which I have not yet been able to shoot. It was interesting to hear some of the people at Coban talk of Delattre's visit, and of what he did and where he went. It seems that they have been in the habit of shooting and collecting birds ever since that time. Another thing I ascertained which will be interesting to British zoologists, viz. that *Nauclerus furcatus* breeds in the mountains about Coban. My chief ally and collector there found a nest with young last year. Of course, I am making every endeavour to secure the eggs next season. He tells me I am tolerably certain to obtain them."

Comparative List of Humming-birds of Dueñas and Coban.

DUEÑAS.	COBAN.
<i>Petasophora thalassina.</i>	<i>Petasophora delphinæ.</i>
<i>Eugenes fulgens.</i>	<i>Eugenes fulgens.</i>
<i>Amazilia arsinoë.</i>	<i>Phaethornis adolphi.</i>
<i>Campylopterus rufus.</i>	<i>Amazilia riefferi.</i>
,, <i>delattrii.</i>	<i>Campylopterus delattrii.</i>
	,, <i>pampa.</i>
<i>Chlorostilbon osberti.</i>	
<i>Cyanomyia cyanocephala.</i>	<i>Cyanomyia cyanocephala.</i>
<i>Heliomaster longirostris.</i>	
<i>Delattria viridipallens.</i>	<i>Delattria viridipallens.</i>
<i>Heliodedica melanotis.</i>	<i>Heliodedica melanotis.</i>
<i>Myiabeilla typica.</i>	<i>Eupherusa eximia.</i>
<i>Trochilus columbris.</i>	<i>Myiabeilla typica.</i>
<i>Selasphorus heloisæ.</i>	<i>Trochilus columbris.</i>

* This is *Eumomota superciliaris*.—ED.

DUEÑAS.

Selasphorus platycereus.
Delattria henrici.
Lamprolæma rhami.
Thaumastura henicura.

COBAN.

Thaumastura henicura.
Thaumantias candidus.
Lophornis helenæ.

" Dueñas, Dec. 31st, 1859.

" My trip to Vera Paz terminated a few days ago. As yet, I have not been able to arrange my collections, which are large, so as to be able to say more than what I wrote to you by last mail. I have been, and am exceedingly pleased with the results, and have gained a vast deal of information as regards the knowledge of the geography of the country. I fear you will be rather staggered by the number of birds I am sending—some 800; but I little knew, when I first arrived at Coban, what powerful assistance I was going to have when I employed the small boys and their pea-shooters to bring me birds at a *quartillo* ($1\frac{1}{2}d.$) a piece. The skins from San Geronimo reach 100, and those I previously had here 250. Of those from the former place, some are interesting, especially the beautiful Motmot, which is common there; I also found *Tryphæna duponti* and *Amazilia corallirostris*. The plain of Salamà is, as you will see on the map, connected by a tributary of the Rio de la Passion with the northern coast-region of Yueatan. On the opposite side of the southern range of hills which bound the plain, not five leagues from Salamà, at a place called Choacas, at about the same elevation, the watershed changes into that of the Motagua or Rio Grande. Consequently I found, on passing from San Geronimo to this last-mentioned place, some five or six birds I had never observed at San Geronimo,—and my list of the birds of San Geronimo includes about 100 species. The changes of the physical features of this country have surprised and puzzled me much. The divisions seem to be these: First, the northern and southern coasts, which include the dense tropical forests; next come the arid plains and hills, such as those of Zacapa and Salamà, also a hot country; next the table-lands, which include the *Altos*; and apart from these I place the





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Alta Vera Paz, as it is called, of which Coban is the principal town. This so differs in its contour, soil, and productions, as to render it sufficiently distinct from the last division, though also a cold district. Of birds, some are especially confined to each of these divisions, but by far the greater number are common to two or more, and many to all. They seem more distinctly defined by the botanical productions; Palms, the *Cieba*, and mahogany, being characteristic trees of the coast-forests; *Mimosæ* and *Cacti* of the second division, evergreen oaks of the table-lands, and the trees called in Coban *Pimienta*, *Liquidamber*, and *Palo Santo*, illustrating the last.

"My present collection of snakes, lizards, frogs, &c., is not large, but I intend sending what I have, also the few mammals and butterflies, so that I may clear out everything this month, ready for a fresh start, as in the beginning of February I go again to Coban, intending to collect a little on the Motagua on my way. At Coban I mean to shoot some Quesals, and go on, if possible, to Cajabon; after that, to the mines of Alotepeque and Copan, and perhaps on to Tequieicalpa in Honduras."

"I cannot find any land-shells, though I have looked for them frequently; all I have in that way are some two or three species of freshwater shells from the Lake of Dueñas."

Mr. Wallace's last communications are dated Amboyna, Oct. 22, 1859, whence he has sent us the valuable contributions to our pages which we have the pleasure of inserting in our present Number. He further says,—

"I have just packed up a large collection of Gilolo and Ternate birds, as well as those from Menado. The former are a much gayer lot, comprising a fine series of *Pitta maxima*, a new *Megapodius*, I think, handsomely banded on the back, and a *Semioptera*, which differs a little from the Bateian specimens in the much greater length of the breast plumes and other details. Is the *Caloenas* the true *nicobarica*? If so, it is a unique case of a true land-bird ranging through the whole Archipelago, and beyond its limits from the Andamans to New Guinea. I do not know where Bonaparte got his in-

formation about its being arboreal. Here it is truly terrestrial, perching only to rest and sleep.

"It is astonishing how little care even professed naturalists have given to determining localities. The localities of species given by the 'Dutch Scientific Commission' are full of errors. *Ptilonopus monachus* and *P. hyogaster* are given to Celebes, whereas they are unknown there, but are abundant in Gilolo and Batchian; and exactly the same error is made with *Macropygia reinwardti*, which you will see in my collections, but not from Celebes. *Todiramphus funebris* is also unknown in Celebes, but common in Gilolo, so that the Dutch naturalists seem to have placed all their species of unknown locality in Celebes, acting as the French have done in giving to the little island of Vanikoro hundreds of insects which were never found there.

"Among the other interesting species from Gilolo are a *Ptilonopus* and a *Platycercus*—both, I think, new; the beautiful *Ianthænas halmaheira*, Bp., and several fine aquatic birds and Waders.

"In a few days I commence work in Ceram, where I hope to make a very fine collection, especially of *Psittacidae*, the Lories of Ceram surpassing even those of New Guinea in variety and beauty. I live in hopes too of a new *Semioptera*, or some equally interesting form.

"I take every opportunity of purchasing live specimens of Parrots from the islands I may probably not visit, and hope to get most valuable materials for elucidating their distribution in the East, which is in the highest degree interesting. Between the *Lorius garrulus* of Gilolo and that of Batchian there is a constant difference in the size of the dorsal yellow patch: are they considered distinct species?

"The species of Ceram birds mentioned in Bonaparte's 'Conspectus' are very few: how is it, then, that it has such a name for fine birds? I know nothing fine from it, but the Lories, which are superb. However, I hope and believe it will produce some very fine things—new Pigeons, perhaps. The Cassowary is said to be abundant in Ceram, and to be the same as the New Guinea species. The *Tanysipteræ* are very puzzling: which is the true *T. dea*, Linn.? The Dorey and Ternate specimens seem





20. **POLIOSPIZA TRISTRIATA**, Bp. *Serinus tristriatus*, Rüppell.
Shot on the mountains, where they fly about in flocks like English Sparrows.

21. **PYRRHULAUDA LEUCOTIS** (Stanley).

This delicate little bird I found only at Bunder Goree, feeding on the sand in front of the huts. The hen bird has no black upon the breast.

22. **LANIARIUS CRUENTUS** (Ehrenberg). Somáli name, *Idatnis*.

23. **PLATYSTEIRA SENEGALENSIS** (L.).

24. **SAXICOLA ISABELLINA**, Rüppell.

25. **SAXICOLA MELANURA**, Temminck.

These two Wheatears I found on the Plateau.

26. **DICRURUS LUGUBRIS**, Ehrenberg.

A King Crow, with habits like the Indian one. Irides red.

27. **NECTARINIA HABESSINICA**, Ehrenberg.

A beautiful species of Honeysucker, whose lustrous metallic feathers, when flitting in the sun, endeavouring to extract seed from the bells of flowers, are resplendently gaudy.

28. **NECTARINIA ALBIVENTRIS**, Strickland, Jardine's Contr. Orn. 1852, pl. 86, p. 42.

Male and female. These Creepers, like the last, inhabit the Plateau, and are always found in company with them, flying about shrubs, plants, and flowers. Mr. Blyth says, this species has only been obtained in the Somáli country.

29. **PTEROCLLES SENEGALENSIS** (Latham). *P. guttatus*, Liechtenstein. The Rock-Pigeon or Sand-Grouse. Somáli, *Fuku*.

These birds are found on the Plateau in large flocks, and in habits correspond with the Indian bird of the same size.

30. **PTEROCLLES LICHTENSTEINI**, Temminck.

This bird frequents hills, like the Indian *Pterocles fasciatus*, the Painted Rock Pigeon of sportsmen, which it generally resembles; but it is readily distinguishable upon comparison, being a considerably larger bird, and richer in its markings. At first sight I mistook it for the Indian bird.

31. **PTERNISTES RUBRICOLLIS** (Latham).

Common Somáli Partridge, called by the natives *Digrin*. It runs like the red-legged bird, and is very hard to kill; but the flavour of its flesh is good, even better than that of any other game in the country, and repays one well for the trouble of shooting it.

32. **SCLEROPTERA GUTTURALIS** (Rüppell).

I shot this Partridge on the mountain, and could not hear of its existence anywhere else.

33. **SYPHEOTIDES HUMILIS**, Blyth, Journ. As. Soc. Beng. xxiv. p. 305.

A Floriken with yellow iris, called by the Somáli *Waradada*. When frightened, it flies off, uttering a loud cry like *ka-ki-rak*, *ka-ki-rak*. I found it here on the Plateau amongst low herbage and grass, but not so numerous as I subsequently did in Central Africa, south of the equator. The male is smaller than its mate, and has black feathers, which distinguish it, under the lower mandible.

34. **ŒDICNEMUS AFFINIS**, Rüppell. Somáli, *Kedinhitu*.

Irides light straw-yellow. In almost all particulars of habit it corresponds with the common Indian bird of the same size.

35. **CHENALOPEX AEGYPTIACUS** (L.). Egyptian Goose. Somáli, *Etal-Jaz* ("who lives at wells").

I found these birds also on the lakes south of the equator.

36. **PHALACROCORAX LUGUBRIS**, Rüppell. (*Carbo melanogaster*, Cuv., Par. Mus.)

A common sea-bird, which I shot at Bunder Goree.

Ibis
1860.

XXX.—*History of the Derbyan Mountain-Pheasant* (*Oreophasis derbianus*). By OSBERT SALVIN, M.A., F.Z.S.

THOUGH some years have elapsed since the discovery of this strange bird, little or no additional information has been given as regards its habits and economy. Having resided for several months in the neighbourhood of its only known locality, I shall offer no apology for entering somewhat at length upon the few facts that I have been able to pick up, relating both to the



specimens previously sent and also to those that I have recently been fortunate enough to obtain.

The first specimen of the *Oreophasis* ever obtained was shot by Don Joaquin Quiñones about the year 1848, when in search, in company with Mr. Wyld of Dueñas, of the large Pigeons (*Columba fasciata*), Quails (*Ortyx thoracicus*, &c.), and other game found in the forests of Calderas in the Volcan de Fuego in Guatemala. This bird was preserved by Mrs. Wyld, and sent as a present to the late Mr. Klée, of the house of Klée, Skinner & Co. of Guatemala, and by him forwarded to the late Earl of Derby. It is now, I believe, to be seen in the Liverpool Museum, and is the specimen from which the figure in Gray and Mitchell's 'Genera of Birds' was taken.

A specimen brought to England by Mr. Skinner in the year 1855 I have not been able to trace ; I believe it arrived in bad condition. For the two skins obtained by the same gentleman in the following year Mr. Skinner was again indebted to Mr. Wyld, who employed a man of the name of José Ordoñez, a native of Dueñas (a hunter of deer and peccaries), to procure them. This man has since assured me that it was not until he visited the mountain for the third time that he succeeded in shooting them. The high price Mr. Wyld paid for these two birds, and the news of their great rarity in Europe, made the *Oreophasis* more sought after ; and Mr. Rittcher, a resident in Guatemala, succeeded in obtaining two, which were, I believe, forwarded to Hamburg. Don Vicente Constancia, of Antigua Guatemala, also, now has in his collection an indifferent skin.

These seven examples are all that I can hear of as having been preserved hitherto.

During the six months I spent in Guatemala in 1858, I did not obtain specimens of the *Oreophasis*, though José Ordoñez was taken into consultation. My collections were made principally in the plains about Dueñas, and not in the Volcano. Last year (1859), while absent in Vera Paz, José Ordoñez brought one to the house at Dueñas ; but no one being there to skin it, it was lost. On my return I again employed the same man, and the following morning had the satisfaction to see him walk into the yard with one tucked under his arm, and again on the sue-

ceeding day with one under each arm. The first of these was a male, the other two females,—the three skins which were exhibited by Mr. Sclater at the Meeting of the Zoological Society on March 13, 1860. Being particularly desirous both of seeing the bird alive and of shooting it myself, and having the fruit taken from the crop of one of the above-mentioned birds, as a clue to indicate in what trees it would most likely be found, I set off for the mountain soon after this, with José Ordoñez for my guide. We started at six o'clock in the morning at break of day, reached the forest region at nine, and continued climbing until we had almost passed out of it into the region of Pines and coarse grass with which the peak is clothed, but no *Oreophasis* was met with. Descending again, we struck the barranco in which José had shot the specimens he brought me; but with no better success, except that I found unmistakeable "sign" in the shape of feathers, and the fruit of the tree I had been in search of. Though not successful, this expedition was satisfactory in one respect—I had seen a spot where the *Oreophasis* certainly had visited, and where my specimens had been killed. The truth of the latter fact I have no reason to doubt. From a habit one acquires of looking upon a Central American half-breed as a rascal till he has proved himself honest, I certainly did at first suspect that José was deceiving me, and that he had no idea of allowing me to poach upon his peculiar preserve of *Oreophases*. I regret that I cannot give any other than José's account of the habits of this bird; but as his stories bear a semblance of truth, I do not hesitate in transcribing them. In the early morning he told me he usually found them in the upper branches of the forest trees, searching for their favourite fruit, which they eat both ripe and unripe; as the day advances they descend to the underwood, where they remain all day, basking or scratching among the leaves. This is pretty much what a *Penelope* or a *Craugastor* does, both of which I have frequently had opportunities of observing in the forests of the low lands. The cry of the bird he could not describe satisfactorily.

As the Volcan de Fuego is at present the only known locality from which the *Oreophasis* has been obtained, I will here shortly describe its physical conformation. The north-



ernmost of the three peaks into which the whole mountain is divided, seems to be, geologically, the most ancient. When this attained its present elevation (nearly 14,000 feet above the level of the sea), the fires broke out on its southern side, raising another peak equal in height to the original one. Again a fresh crater has opened on the southern side of the second peak, more nearly at its base, heaping up the vast conical mass, from the point of which still issues a thin but constant curl of white smoke. This last is the true Volean de Fuego, the "voleano of fire," though the term is applied to the whole group. All these three mountains are united up to a high elevation, the fire-peak being connected with the other two by a horizontal ridge, which probably indicates a third outbreak on the southern slope, of less magnitude, and antecedent to the existence of the present crater. All traces of craters have disappeared from the original peaks, they having been, doubtless, filled up by ashes from subsequent eruptions. The sides of these mountains, or rather mountain (as, except very near their summit, they are actually one), are cut from top to bottom by deep ravines or barrancos. The lower part of the base, to a height of some 2000 feet above the *llano* of Dueñas, has been cleared of its forests by the Indians for their fields of maize and *frijoles*; but these cleared lands have been since abandoned, and a thick brushwood has sprung up. The forest region commences at about 2000 feet above the plain, or about 7000 feet above the level of the sea. It extends upwards until its component trees become scattered Pines, which diminish in number as the elevation increases to the summit. The lower part of this forest region consists principally of evergreen Oaks; these in their turn give way, on ascending, to the Hand Plant (*Chirostemon platanoides*), the "Khanák" of the Indians, with here and there a patch of Alder. These trees again are succeeded by Pines and coarse grass in the northernmost peaks, and by loose ashes and rocky precipices in the fire-peak. A tree called the "Palo caretá," the "Khakhachay" of the Kachiquel Indians, grows between the line of junction of the Oaks and Khanak, the fruit of which is sought by the *Oreophasis*. It is a fine forest-tree, and usually grows in or near the bottoms of the ravines. It is, however, by no means common. Its fruit is about the size of

252 Mr. O. Salvin on the Derbyan Mountain-Pheasant.

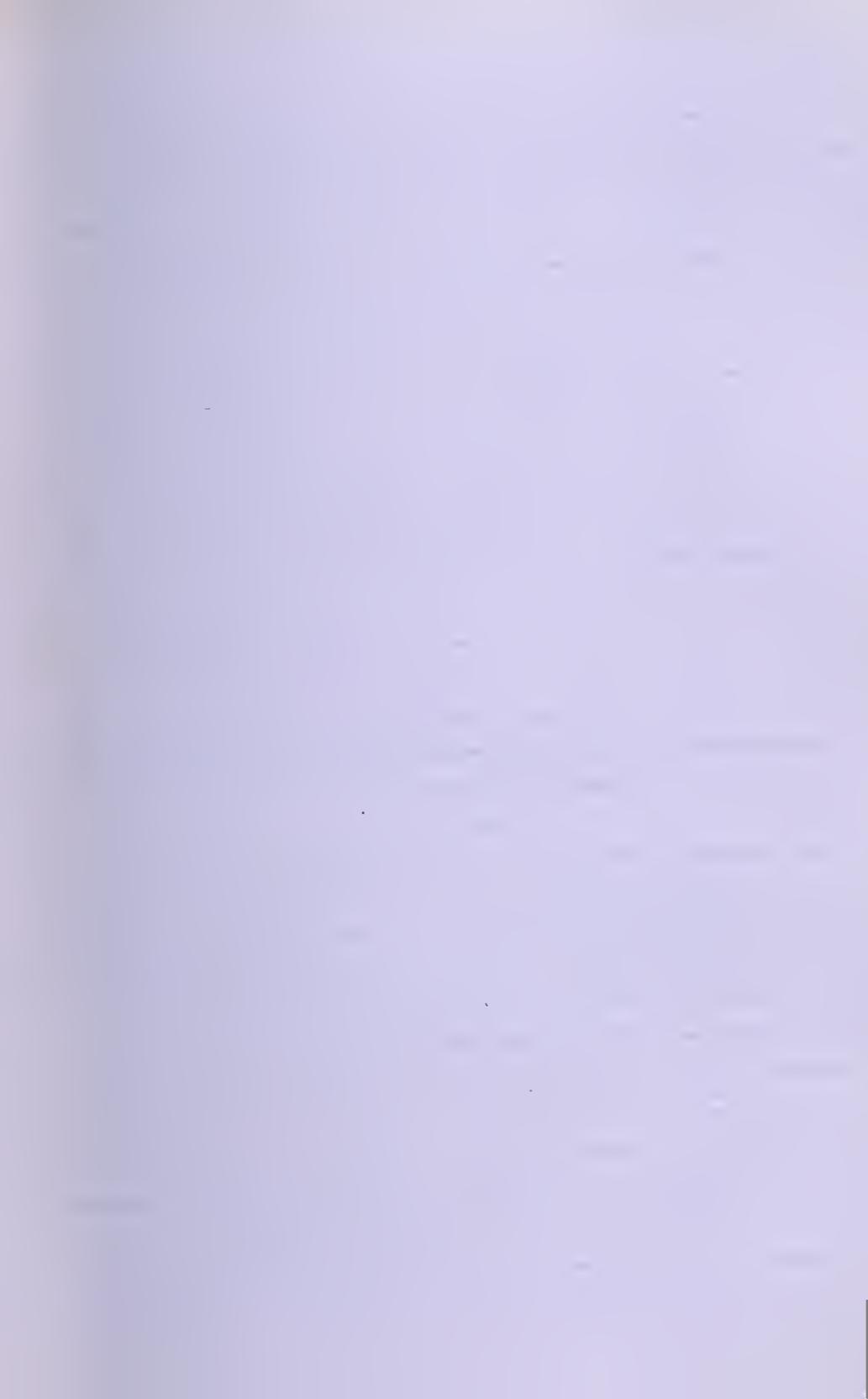
a walnut, has a purple skin when ripe, and a large stone in the centre : it is ripe in January*. This forest is evidently the home of the *Oreophasis*, as the *Cracidae* (and to this family the present bird undoubtedly belongs) are a family of forest-loving birds, any member of which would feel strangely out of its element in one of those open sunny savannas in which artists delight to place them.

In 'The Ibis,' 1859, p. 224, I stated that there was good reason to suppose that the examples of *Oreophasis* procured by Mr. Skinner were obtained from the Volean de Agua. This I find was not the case, as they were shot nearly in the same spot in the Volean de Fuego as my specimens. Strange as it may seem, the Volcan de Fuego is the sole locality which has produced this bird. I made every inquiry for it in Vera Paz, where the forests of the mountain-tops somewhat resemble those of the volcanos, but could hear nothing of it ; nor is it even known to the charcoal-burners of the Volean de Agua. Though its non-occurrence in localities which might be supposed favourable to its existence rests on negative evidence, yet it is certain that, whereas to the Indians frequenting the Volean de Fuego the bird is well known, nowhere else can its existence be traced, not even in the Volcan de Agua. From all I could hear, and from having made three or four fruitless expeditions in search of it, I am led to conclude that it is rare even in the single mountain where it is found. This supposition is borne out by Mr. Wyld, who has frequently inquired of the Indians of San Pedro Ipocapa and Aeatenango (villages on the southern and western sides of the volcano), but could hear nothing of it.

The *Oreophasis* is known to the Indians frequenting the mountain as the "Khannanay," and to the Lardinos or half-bred Indians as the "Faisan."

The female of *O. derbianus* was until lately unknown to science. Owing, I am inclined to think, to the absence of positive information on the subject, she has been supposed to bear plumage different from the male (as is the case in *Crax*

* Specimens of the branches and fruit of this tree have been submitted to Dr. Hooker, who has kindly identified it as a *Prunus*, closely allied to, if not the same as, *Prunus occidentalis* of the West Indies.



(*globiceera*), and probably to want the standing bony crest which forms so marked a feature in this species. From the three birds brought to me by José Ordoñez, I am able to state that the female differs in no way from the male except in being rather smaller in size, and in having the crest on the head rather shorter and more tapering. All three specimens were adult, and the ovary of the females very plainly developed. Of the sex of the male, too, I can speak with equal certainty. Comparing the sternum with that of *Penelope purpurascens*, a very marked affinity is observable. The cranial protuberance is attached to the skull. It is hollow, the cavity being filled with a cellular tissue, as in the bill of a Toucan (*Ramphastos*). The enclosing bone is extremely fragile, and in the females may easily be crushed between the finger and thumb. The crest is deep vermillion in colour, also the legs and toes. The bill is a very pale straw colour, and the iris white. The male, the day after it was killed, weighed 5 lbs.

11 Hanover Terrace, Regent's Park,
May 25th, 1860.

XXXI.—*Recollections of the Swans and Geese of Hudson's Bay.*

By GEORGE BARNSTON, of the Hudson's Bay Company's
Service.

SWANS, except in a few particular localities, are scarce, rather than plentiful birds on the shores of Hudson's Bay. They are seen at the same time as the other migratory birds, winging their way to the secluded recesses of the North, resting throughout the interior, and losing units of their number here and there by the Indian's gun. In the scarcity of their favourite food (the roots of the *Sagittaria sagittifolia*), they have recourse to those of *Equisetum*, and the tender underground runners of some grasses of the northern latitudes. They sometimes breed in the interior before arriving at the coast. I had two eggs brought to me from a nest on the banks of a lake near Norway House; but I cannot say whether these were of the *Cygnus americanus* or *C. buccinator*. Towards Eastmain Fort, in James's Bay, a considerable number of Swans hatch; and a few are killed

by the natives there, as they pass up and down narrow rivers communicating with the sea-coast and the lakes of the interior. The numerous flocks that are to be seen in the winter months on the expanses of the larger rivers that run into the Pacific, embellishing all the larger sheets of water with their silvery strings, must break up as they enter or advance upon their long spring journey, for they are generally seen but few together in the neighbourhood of Hudson's Bay. They may be more united, however, at the particular haunts where they breed.

Superior to the Swan as an article of food, the Goose, of every species, is the favourite dish of the Indian of Hudson's Bay. When the long and dreary winter has fully expended itself, and the Willow Grouse have taken their departure for the plains of the North, there is frequently a period of rank starvation to many, who are on their way from their wintering ground to the Trading Posts. The first call, therefore, of the large Canada or Grey Goose is heard with a rapture known only to those who have endured great privations. The tents are filled with hope, to which joy soon succeeds, when the happy father or hopeful son and brother throw down their grateful load.

The *Bernicla canadensis*, here alluded to, is the largest of our Geese, and is almost always first seen in the Hudson's Bay Company's territories,—at first perhaps only one straggler, or two or three at most together, but soon to be followed by a continuous flock of fresh immigrants. They are the advanced guard of the scurried legions of other water-fowl. This spring-bird, as if aware of the general favour in which it is held, spreads itself diffusively over the whole breadth of the continent. Its disposition has less of wildness in it than that of the Snow Goose. We find it hatching in quiet holes and corners where there is placid water and grass and rushes to afford it sustenance. It is at home over the whole wooded country, as well as on the extensive marshes of the sea-coast, and the mossy barrens of the Esquimaux and Chipewyan Lands. During the winter, like the other species, they take refuge in the more temperate parts of the country, where they can always have open water. I have seen a small flock in the strong open current of water above Lachine, near Montreal, in the month of January or February; but this is rare.





southwards from Hudson's Bay alone to the warmer latitudes. I cannot form an opinion of the comparative numbers to the westward, that is to say, of the Geese that leave the Arctic coast and wend their way straight to their winter quarters without touching the Bay at all; but supposing it to equal the flight of the body already mentioned, we shall then have 720,000, or perhaps say 800,000 Geese leaving the coasts east of the Rocky Mountains for their places of hibernation:—the Brant Geese are not included. This may be supposed much underneath the true estimate, yet I would not wish to give a greater; for although the swarms of Geese passing appear at times prodigious, yet, like many other scattered objects, when they come to be collected and counted, they become subject to a moderate figure. Say that Geese fly about a yard apart: this would make a winged string of life 450 miles in length; and suppose the rate of flight was 40 miles per hour, and the line led by one going straight south, they would take eleven hours in passing any given object.

Michipicoton, Dec. 6th, 1859.

XXXII.—*Notes on the Humming-birds of Guatemala.*
By OSBERT SALVIN, M.A., F.Z.S.

Ibis
1860.

THE following notes relate to species of Humming-birds observed in Guatemala, at Dueñas, Coban, and Salamá, during the months of August, September, October and November 1859.

The references to each species will be found in the previous papers on the Ornithology of Central America published in this Journal.

As I have collected many examples of the several species of Humming-birds, I take the opportunity of illustrating, by actual figures, the ratio in numbers the males bear to the females, and give under each separate species that ratio, as shown by the specimens before me.

It may be from not having hit upon the localities for the opposite sex, that I have found one, be it male or female, usually largely predominating; yet it seems somewhat strange that the localities in which I have worked should have been, with few exceptions, those in which the males most abound. I will not

raise an hypothesis on this subject upon the facts that I have, up till now, collected, but merely state the numbers, and wait for further investigations.

✓ 1. PHAETHORNIS ADOLPHI.

Coban, Vera Paz. November 15th.

Though not common about Coban, this species seems pretty generally dispersed. Like many others, it feeds among the *Salviae*. To a practised ear its presence may be detected by the peculiar hum of the wings. This at once warns the collector to look out sharply among the lower branches and flowers, which are well searched by this bird, while the upper shoots of the bush are comparatively neglected. At Yzabal, where *P. adolphi* abounds, its habits somewhat differ. This is probably owing to the very different nature of the plants from which it takes its food, rather than to any other cause. If the females are to be distinguished from the males by their yellower throat, the ratio of the sexes is two females to seven males.

✓ 2. CAMPYLOPTERUS DELATTRII.

Coban, Vera Paz. November 1859.

The large size and showy tail of this Humming-bird make it one of the most conspicuous when on the wing. It is common at Coban, feeding among the *Salviae*. It is said also to be found in the Volcan de Fuego, but I have not yet met with it. The females of this species are most abundant, their ratio to the males being as five to two. *C. delattrii* is not nearly so shy as its congener, *C. rufus*.

✓ 3. CAMPYLOPTERUS PAMPA.

Coban. November.

A single female specimen only was brought to me while at Coban.

4. PETASOPHORA THALASSINA.

Volcan de Fuego. September 6th.

The barraneos of the Volcano are favourite resorts of this species.

Dueñas, September 15th. A specimen obtained on this day is the only one I have seen out on the llaño, as the bird is usually found in the dense forest.



✓ 5. PETASOPHORA DELPHINÆ.

Coban, Vera Paz. November.

This Humming-bird seems to have been quite unknown at Coban previously to the present specimens being collected. The first was shot by my collector, Cipriano Prado, among some *Salviæ*, in one of the mountain-hollows near Coban. I afterwards visited this place and saw one bird, but did not succeed in shooting it. *Salviæ* being in flower in November, their blossoms are sought after by nearly every species of Hummingbird near Coban, this among the rest. It is a rare species even at Coban, and though much looked for by the Indian boys in consequence of my offers of reward, but few specimens were obtained.

The females appear only to differ from the males in being smaller in size, the colouring of the ear and throat being quite as brilliant. Three males to one female appears to be about the proportion of the sexes.

✓ 6. CYANOMYIA CYANOCEPHALA.

Dueñas and Coban.

This species is common at Dueñas, but its numbers at Coban are very much smaller. The sex of the young males seems sufficiently indicated by the colouring of the head.

✓ 7. EUGENES FULGENS.

Dueñas, Coban, and Tactic.

This species is also rare at Coban. The place described as frequented by *Amazilia dumerillii* is the spot where I have found this species in greatest numbers; indeed, with two exceptions, I have never met with it elsewhere near Dueñas. It is a most pugnacious bird. Many a time have I thought to secure a fine male, which I had perhaps been following from tree to tree, and had at last seen quietly perched on a leafless twig, when my deadly intention has been anticipated by one less so in fact, but to all appearances equally so in will. Another Humming-bird rushes in, knocks the one I covet off his perch, and the two go fighting and screaming away at a pace hardly to be followed by the eye. Another time this flying fight is main-

tained in mid air, the belligerents mounting higher and higher, till the one worsted in battle darts away, seeking shelter, followed by the victor, who never relinquishes the pursuit till the vanquished, by doubling and hiding, succeeds in making his escape. These fierce raids are not waged alone between members of the same species. *Eugenes fulgens* attacks with equal ferocity *Amazilia dumerillii*, and, animated by no high-souled generosity, scruples not to tilt with the little *Trochilus colubris*. I know of hardly any species that shows itself more brilliantly than this when on the wing; yet it is not to the midday sun that it exhibits its splendour. When the southerly wind brings clouds and driving mist between the volcanos of Agua and Fuego, and all is as in a November fog in England, then it is that *Eugenes fulgens* appears in numbers; *Amazilia dumerillii*, instead of a few scattered birds, is to be seen in every tree, and *Trochilus colubris* in great abundance. Such animation awakes in Humming-bird-life as would hardly be credited by one who had passed the same spot an hour or two before; and the flying to and fro, the humming of wings, the momentary and prolonged contests, and the incessant battle-eries seem almost enough for a time to turn the head of a lover of these things. I have fifteen males from Dueñas to one female, which I shot, but did not skin,—one male from Coban, and two males from Taetie.

A "London fog" must not be understood here, as the yellow element is entirely wanting.



8. MYIABEILLIA TYPICA.

Volean de Fuego (September 6th) and Coban.

The barraneos of the Voleano are the only localities I am aware of, near Dueñas, where this species is found. There, however, it is a common bird. It is usually to be seen feeding about the brushwood, seeking the flowers, &c. It is a restless species, but shows little symptoms of fear.

My skins from the Voleano are one female and three males. The proportions at Coban are very different. Here it is common, being found in all the mountain-hollows, feeding among the *Salviae*. The ratio of the sexes is as twenty males to one female.



✓ 9. DELATTRIA VIRIDIPALLENS.

Volcan de Fuego. September 18th.

This Humming-bird seems to keep entirely to the forests of the Volcano. I have never met with it in the plains below.

During the months of August and September, the localities of the various species of Humming-birds are usually as follows:— Among the trees on the south-eastern side of the lake are *Amazilia dumerillii*, *Thaumastura henicura* (mostly females), *Campylopterus rufus*, *Heliomaster longirostris*, *Chlorostilbon osberti* (in small numbers), *Cyanomyia cyanocephala*, and *Trochilus colubris*.

On the hill-side to the south-westward of the lake are great numbers of *Campylopterus rufus*, and among the willows close to the water the males of *Thaumastura henicura* congregate. About the Convolvulus-trees in the llaño at the foot of the Volcano are found *Eugenes fulgens*, *Amazilia dumerillii*, *Thaumastura henicura* (in small numbers), *Trochilus colubris* (very commonly towards the end of September), *Cyanomyia cyanocephala*, *Heliomaster longirostris* (rarely occurring).

Entering the first barranco that opens out into the plain, we meet with *Campylopterus rufus*, *Myiabeilla typica*, *Heliodedea melanotis*, and, a little higher up, *Petasophora thalassina* and *Delattria viridipallens*. Of course, occasionally a species is found not in its place as here indicated; for instance, I have seen in the first locality a single specimen (the only female I have met with) of *Eugenes fulgens*, and another high in the Volcano. I have also seen a single *Petasophora thalassina* out on the llaño. These localities must therefore be taken as only generally indicating the distribution of the species found about Dueñas.

This is one of the commonest species at Coban. It may readily be recognized by the peculiar harshness of its note.

✓ 10. HELIOMASTER CONSTANTI.

San Gerónimo.

A single specimen was brought to me by a boy. I never saw the species myself at San Gerónimo.

11. HELIOMASTER LONGIROSTRIS.

Dueñas.

The white sides and the white spot on the back show very conspicuously as this bird rests on its perch.

✓

12. THAUMASTURA HENICURA.

Dueñas. August.

The Humming-birds' nests near the house at Dueñas, in the year 1859, met with singular misfortune. Without looking especially for them, I found three of *Cyanocephala*, three of *Thaumastura henicura*, and one of *Campylopterus rufus* close by, besides others more distant. Of these seven, one only, or perhaps two pairs, succeeded in rearing their young. The three nests of *C. cyanocephala* were all in the Cypress-trees. The first I took; the second was destroyed by some Indians after the eggs had been incubated for some time; the third remained unmolested, but I was not able to ascertain whether the young birds were reared. The nest of *C. rufus* was also in one of the Cypress-trees, at a height of about 5 feet 6 inches from the ground. It had two eggs when I found it; but the day following, eggs, nest, and the branch on which it was placed, were destroyed by some Indians who were working near. I am unable therefore to describe accurately the construction of the nest of this last species, and can only remark that the old bird, most probably the female, allowed me to approach very closely—indeed, so near that my head was within a foot of her. Of course I was obliged to tread softly and slowly, and to keep my eyes steadily fixed upon her. This tameness was a strong contrast to the usually shy habits of this species.

Two out of the three nests of *T. henicura* met with no better fate than those just mentioned. One of these two was in a Coffee-tree, and had two eggs. These were destroyed by some means or other, soon after the hen bird had begun to sit. The other nest of the two was most curiously placed in the cup-shaped top of a fruit of the Nopal (*Cactus cochinchinifer*), the fastenings being dexterously wound round the clustering prickles, and thus retaining the whole structure most firmly in its place. This nest was remarkably shallow; so much so, that, if it had not contained its two eggs, I should have pronounced it far from complete. It may be that, being based on a firm foundation





(one not nearly so liable to oscillation by the wind), the bird had found that a greater depth was not necessary to keep the eggs from falling out. Had she placed her nest on a slender twig, such a one as seems to be the usual position chosen, the case might have been different. The third nest had young. It was placed in the upper shoots of a Dahlia which grew at the further end of the court-yard of the house. The hen bird seemed to have the entire duty of rearing the young, as I never once saw the male near the place; in fact, I never saw a male *T. henicura* inside the court-yard at all. When the hen was sitting she would sometimes allow me to go quite close to her, and even hold the branch still when it was swayed to and fro by the wind, without evincing the slightest alarm. But it was only when a hot sun was shining that she would allow me to do this; when it was dull or raining, four or five yards was the nearest I could approach. Frequently when I had disturbed her I would sit down close at hand and wait for her return, and I always noticed that, after flying past once or twice overhead, she would bring a small piece of lichen, which, after she had settled herself comfortably in her nest, she would attach to the outside. All this was done with such a confident and fearless air, that she seemed to intimate, "I left my nest purely to search for this piece of lichen, and not because I was afraid of you." When sitting upon her nest the whole cavity was quite filled by her puffed-out feathers, the wings, with the exception of their tips, being *entirely concealed* by the feathers of the back. When the young were first hatched, they looked little, black, shapeless things with long necks and hardly any beak. They soon, however, grew, and entirely filled the nest. I never saw the old bird sitting after the young had emerged from the eggs; she seemed to leave them alike in sun and rain. When feeding them, she would stand on the edge of the nest with her body very upright. The first of these young ones flew on October 15. It was standing on the side of the nest as I happened to approach, when it immediately flew off, but fell among the flowers below. I placed it again in the nest, but a moment after it was off again, nothing daunted by its first failure,—this second time with better success, for it flew over a wall close by and settled on a tree on

the other side. In the evening of the same day, I saw the old one feeding it, and went up to the tree; but it started off with increased vigour to an orange-tree, and tried at first to rest on one of the fruit, but failing, found a more appropriate perch on the edge of a leaf. I never saw it afterwards.

The other young one flew on October 17th, two days later. The proportion of males to females, of my Dueñas skins, is as five to three, while of those from Coban, as three to five.

The seeds of the willow and bulrush are favourite materials for the interior structure of the nest of *T. henicura*, while lichen is freely used outside.



13. SELASPHORUS HELOISÆ.

Volean de Fuego and "tierra caliente" N. of Coban.

Two birds were given to me by Don Vieente Constancia, who had just received them from a place called Chimachoyo, near Calderas in the Volean de Fuego. Two specimens I have in my collection from Coban were shot in the tierra caliente north of that city. Hence it would appear that this, like many other species of Humming-birds, is found in very different climates.



14. TRYPHENA DUPONTI.

San Gerónimo. December 10th.

Don Vieente Constancia assures me that this species is found near the city of Guatemala; otherwise this is the only locality I have been able to discover, as yet, where it occurs.

Following the course of the river of San Gerónimo up its bed to a distance of about half a league from the village, you come upon a small patch of forest with here and there open spots covered with *Salvia*. Here it was that this bird was shot by a boy, who told me there were plenty; however, on visiting the place soon after, I was not successful in obtaining more specimens, nor was I fortunate enough to see one.



15. TROCHILUS COLUBRIS.

Dueñas and Coban.

The 24th of August was the day on which I first met with this little wanderer from the North. I was shooting some specimens of *Eugenes fulgens* in the locality mentioned for *Amazilia dumerillii*, when I saw and shot a male in one of the





Convolvulus trees. From that date the numbers rapidly increased until the first week in October, when it became by far the commonest species about Dueñas. My first impression on seeing this bird was that it remained in small numbers to breed in this country; but on observing the increasing numbers, I soon relinquished the idea, though it was a natural one, as, at the time of my observing the first bird, in a locality previously unvisited, I was fully aware that *Campylopterus rufus*, *Thaumastura heinicura*, and *Cyanomyia cyanocephala* were either building, or sitting on their eggs. Another proof also that *T. colubris* was not engaged, or about to engage, in domestic duties, was that whereas the resident species in the month of October wore their most brilliant plumage, that of *T. colubris* was tarnished and its lustre gone. The species seems to be very universally distributed; I found it common at Coban, also at San Gerónimo and the plains of Salamá. Of my skins from Dueñas the proportion of males to females is as one to four, but those from Coban exactly as one to one.

16. LOPHORNIS HELENÆ.

Coban. November 17th.

It was interesting to find that the recollection of M. Delattre's visit to Coban was still cherished by the bird-collecting community of that town. In fact he seems to have started the idea of collecting, and ever since there have been persons there who have handed down his original instructions in bird-skinning, so that, from preparing a few Quesals (*Pharomacrus paradiseus*), the Cobaneros have become somewhat celebrated for having formed the various collections which have from time to time been forwarded to Europe from their neighbourhood.

Mr. Gould, in his great work on Humming-birds, gives as a locality for this species "Petinek" (*Peten?*) in the Vera Paz. In the vicinity of Coban itself it is not uncommon, though hardly to be called numerous, and it is most probable that Vera Paz skins have usually been forwarded from this latter place. I was greatly delighted to find myself in the localities of this wonderful little bird—a success I had hardly hoped for, and I made every endeavour during my short stay both to see the bird in its living state and to get specimens.

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On my first arrival in Guatemala the different species of Humming-birds seemed for some time to be alike in their habits, cries, and in the sound produced by their wings. Further acquaintance, however, and constant attention to their peculiarities, soon led me to detect an individuality in the different species, so that, after a time, I was able to name a species at a glance, or, if unseen, with hardly less certainty, from the sound of the wings or cry of the bird. These are differences not to be described accurately in words—at least only in the case of those most apparent. The cry of *Lophornis helenæ* is peculiarly shrill, and unlike that of any other species I know, hence its presence may be noticed if only the cry of a passing bird be heard. It feeds among the *Salviæ* that so abound in the mountain-hollows about Coban, and it is said also to show a partiality for the flowers of the *Tasisco*, when that tree is in full bloom in the month of December. In the month of November females of this species are very rare. Of the specimens I collected there was only one female to seventeen males.

In the Indian language of Coban, *Lophornis helenæ* has, besides the name “*Tzunnun*,” which is applied to all the small Humming-birds, the additional name of “*Achshukub*.” The Spanish name is “*El Gorron Cachudo*”—the Horned Humming-bird.

17. AMAZILIA CORALLIROSTRIS.

San Gerónimo. December.

This is a common species about San Gerónimo. It seems not to be found in the colder and more elevated portions of the Republic, neither occurring at Dueñas nor Coban, but it is very plentifully distributed throughout the Pacific coast-region. It shows a great partiality for the blossoms of the orange and the lime. A nest with two young and the hen bird were brought to me December 6th; the young were half-grown, and would have flown in about ten days. Finding unfledged birds thus late in the season, one is tempted to apply to Humming-birds the question of the entomologist, “Is *Gonepteryx rhamni* double-brooded?”

October is the month of all others that flowering plants and trees put forth their blossoms. It would seem that the nesting season of the Humming-birds is postponed after that of





other species, in order that, when the young birds make their first essay to provide for their own sustenance, the flowers of the forests and plains should be in greatest abundance. Hence, perhaps, it is that September is the month during which the Humming-birds of Guatemala are principally engaged in incubating their eggs and rearing their young,—a time when the young of other birds have long been able to shift for themselves. Perhaps also it would appear that a certain amount of experience is necessary for the young Humming-birds to obtain a regular supply of food, and that to gain this experience it is also necessary that the showy flowers should be in bloom to attract attention, enabling them with greater ease to obtain the requisites of life, until they learn where else their insect prey is to be found among the leaves and shoots.

Though September and the end of August are the months when the Humming-birds of Guatemala usually appear to build, they are not the only ones. In 1858 I found a nest of *C. cyanocephala* in June, and in 1859 one in July, and again a nest of *A. corallirostris* in December.

Other birds show extreme irregularity in their breeding seasons, so much so that one might birds'-nest all the year round. No suppositions respecting the seasons of two places deduced from the fact of the same bird being found breeding in two different months, can be safely inferred, the difference being so great in the same place.

My specimens of *A. corallirostris*, though not in excellent plumage, I think show that, as far as the feathers are concerned, the sexes are alike. A difference, however, exists in the bill, that of the male having much more of the brilliant colour, from which the species takes its name, in the upper mandible.

In the young bird the upper mandible is black. In speaking of this colouring of the bill, I may mention that it appears to be due to the transparency of the outer film of the bill allowing the blood to show through, and not to any especial colouring-matter. This seems to be the case also in many other species, as in *Chlorostilbon osberti*, *Heliopædica melanotis*, *Amazilia riefferi* and *A. dumerillii*, *Lophornis helenæ*, *Cyanomyia cyanocephala*, &c.; and I think it more than probable that where the bill of a dried

skin shows markings of a dull flesh-colour, that part has been coloured in the living bird with some shade of red. There are cases, however, where actual colouring matter is to be noted, in addition to the usual horn-black, as in *Phaethornis adolphi*, where the basal half of the lower mandible is straw-colour.

18. *AMAZILIA RIEFFERI*.

Coban. November.

This *Amazilia* is found also at Yzabal. It is far from common at Coban. All my specimens appear to be males.

19. *AMAZILIA DUMERILLII**.

Dueñas. August.

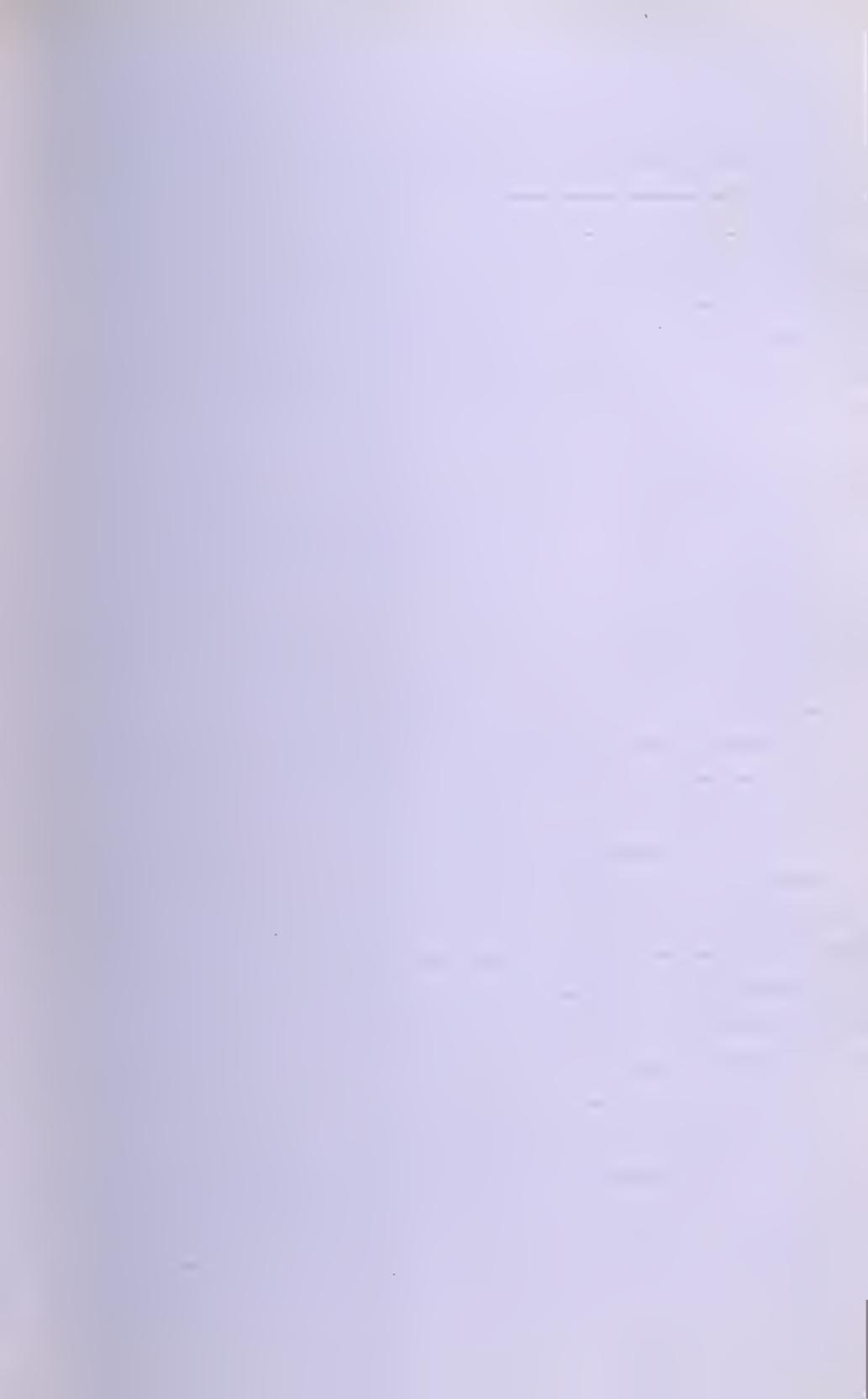
During the months of July, August, and September, one of the most favourite resorts of this Humming-bird was the western boundary of the llano of Dueñas, which, starting from the village, and bounded to the eastward by the river Guacalate, extends, sweeping by the base of the Volcan de Fuego, almost to the Hacienda of Capertillo, its southern extremity. Dispersed all over this plain is found, in groves, patches, and isolated trees, a Tree-Convolvulus, bearing a white flower, and attaining an average height of about 25 or 30 feet. During the above months, this elegant species might be seen in almost every tree, some feeding among the flowers, some settled quietly on a dead branch, uttering their low, plaintive, hardly to be called musical, yet certainly cheering song; others less peacefully occupied in a war of expulsion, driving out, by vehement cries and more effectual blows, the tenant of a tree, which in its turn wreaks vengeance on some weaker or unexpectant antagonist.

Of this species I have skins, of which the sexes are in the proportion of four males to one female.

20. *THAUMANTIAS CANDIDUS*.

This species, which is very abundant about Coban, is found also at Yzabal. Many species of Humming-birds in Guatemala extend through a great range of temperature, the same species

* This *Amazilia* I have previously called *A. arsinoë*; but upon comparing my specimens with Mr. Gould's numerous examples of the Mexican *A. arsinoë* (which I have been enabled to do through his kindness), I find it distinct, and correctly referable to *A. dumerillii*.





being frequently found both in the coast-regions and also in the more elevated districts.

Thus, *Phaethornis adolphi* is found at Yzabal and Coban; *Amazilia dumerillii* at Yzabal and Dueñas; *Selasphorus heloïsæ* at Cajabon, in the "tierra caliente" north of Coban, and at Calderas in the Volcan de Fuego; *Heliomaster longirostris* near Guatemala (Constancia), Dueñas, and Eseuintla (Constaneia). Some species, however, seem to be much more restricted in their range.

The males of *T. candidus* largely predominate in numbers at Coban: of those actually dissected, the ratio is as seven males to one female; but, comparing these with the rest, the ratio becomes eleven to one.

✓ 21. HELIOPÆDICA MELANOTIS.

Volcan de Fuego, Coban, and San Gerónimo.

In some of the open savannas which are scattered among the oak-forests of the Volcan de Fuego near Calderas, this species is not uncommon; in some of the "barrancos" also of the same Volcano, I have frequently met with it.

The white mark running from the eye and the deep coral-red of the bill show conspicuously in the living bird. It is a very shy species.

A single bird was shot and skinned by Cipriano near Coban, and one specimen was brought to me from the mountains of S. Cruz, near San Gerónimo.

✓ 22. EUPHERUSA EXIMIA.

This is one of the commonest Humming-birds of Coban, being found everywhere near the city. The ratio of the males to the females is as ten to three.

✓ 23. CHLOROSTILBON OSBERTI*, Gould.

Dueñas and San Gerónimo. Not uncommon at San Gerónimo.

The only other species of *Trochilidæ* I have observed in Guatemala are—*Phaethornis cephalus*, of the Vera Paz; *Campylo-*

* This name was given by Mr. Gould to a *Chlorostilbon*, very closely allied to *C. canivetii*, described at the Zoological Society's Meeting, June 12th, 1860.

pterus rufus, of Dueñas; *Lampornis prevosti*, of Escuintla; *Chrysura eliciae*, of Coban; *Heliothrix barroti*, of the northern tierra caliente; and *Lamprolæma rhami*, of the Volcan de Fuego, making altogether twenty-nine species. Three others I have not been so fortunate as to meet with, namely *Florisuga mellivora*, of the northern tierra caliente, and *Delattria henrici* and *Selasphorus platycercus*, which are said to occur in the Volcan de Fuego, on Don Vicente Constancia's authority.

His
1860

XXXIII.—*Contributions to the Ornithology of Guatemala.* By OSBERT SALVIN and PHILIP LUTLEY SCLATER. Part II.

[Continued from page 45.]

DURING the autumn of 1859 I collected, in the vicinity of Dueñas on the table-land of Guatemala, and near Coban and Salamá in the Vera Paz, about 870 specimens of birds, belonging to 245 different species, 39 of which are new to the fauna of this country, and have not been noticed in previous papers in this Journal relating to the ornithology of Central America. Of these I now give the names, as determined by Mr. Sclater and myself, together with my field-notes written concerning them at the time they were obtained, and some joint remarks on their synonymy and distribution.—O. S.

- ✓ 1. TURDUS ASSIMILIS, Cab.: Sclater, P. Z. S. 1859, p. 327.
Dueñas, August 1859. Two specimens were obtained in the above locality. I never met with *T. leucauchen*, Sclater, which appears to be common in the low lands of the northern portion of Vera Paz, in this part of Guatemala.
- ✓ 2. TURDUS PALLASI, Cab.: Sclater, P. Z. S. 1859, p. 325.
Coban, Vera Paz, November 1859. A single specimen, apparently of this species.
- ✓ 3. CYPHORINUS PROSTHELEUCUS (Sclater). *Scytalopus prostheleucus*, Sclater, P. Z. S. 1856, p. 290.
Volcan de Agua, January 1860. A single specimen, obtained at an elevation of about 6500 feet, agrees nearly with Mexican skins of this bird in Sclater's collection.

3. The *Henicorhina* *prostheleucus* var *leucostictus* occurs at Cahabon to San Luis
Choctum, Savana grande. —

3. This is *Henicorhina leucophrys*, Tsch.

considerably higher probably 7500 or 8000 ft.

4. Calderas 12 Sep. 1873. Iris dark brown; bill dark hazel: tarsus & toes rather paler. Long. tot. abg: canda 3.1. V. de Fuego.

5. Petatulcan, Coban. -

6. G. poliocephala, Baird. Rev. Am. B. Patis Bolas, Petatulcan.
San Jeronimo.

8. High ridge above Totoniacapan 10,600 ft. Feb. 1874.

5. 10 = D. canadensis ♀

- ✓ 4. *TROGLODYTES BRUNNEICOLLIS*, Selater, P. Z. S. 1858,
p. 297.

Volcan de Fuego, September 1859. This Wren is only found in the forests and barraneos of the Voleano. It is most nearly allied to the Mexiean species described as above mentioned, but is not quite similar to Mr. Selater's speeimens.

- ✓ 5. *SIURUS LUDOVICIANS* (Bp.).

Alotenango, September; Volcan de Fuego, August; Coban, Vera Paz, November 1859. A dry water-eourse in the forest, or in the bottom of a barraneo, seems to be the favourite resort of this Water-Thrush, while its eongener, *S. noveboracensis*, seeks rather the more open streams.

- ✓ 6. *GEOTHLYPIS AEQUINOCTIALIS* (Gm.).

Dueñas, September 1859. This bird appeared about the same time as the northern *Mniotiltidæ*. It is, however, far from common. It agrees with S. Ameriean examples in Selater's collection..

- ✓ 7. *DENDRÆCA CHRYSOPARIA*, Selater and Salvin, P. Z. S. 1860
(May 16th).

I obtained a pair of this beautiful Wood-Warbler on the highest point of the road between Salamá and Taetie. In the coloration of its plumage it partakes of the eharacters of both *D. virens* and *D. townsendii*.

- ✓ 8. *DENDRÆCA AUDUBONI* (Townsend) : Baird, Rep. p. 273.

San Gerónimo, November 1859. Both this speeies and *D. coronata* congregate at this season, and are generally to be seen feeding on the ground. I did not at the moment distinguish this bird from its near ally, *D. coronata*.

- ✓ 9. *DENDRÆCA PENNSYLVANICA* (Linn.) : Baird, Rep. p. 278.

Coban, November 1859. In quite immature or winter dress, with the under surface pure white.

- ✓ 10. *DENDRÆCA* — ?

Coban, November 1859. A single bird, which looks more like *D. pannosa* (Gosse) of Jamaiae, than any other known member of the genus. More speeimens are requisite to substantiate the species.

- ✓ 11. DENDRÆCA SUPERCILIOSA (Bodd.) : Baird, Rep. p. 289.
Dueñas, September 1859. I obtained but two specimens of this species, which does not appear to be common.
- ✓ 12. BASILEUTERUS BRASIERI (Giraud) : Sclater, P. Z. S. 1856, p. 292.
I have only observed this species in the Volcano. It has many of the habits of a *Setophaga*, the characters of which genus I have had more frequent opportunities of watching in the species *S. flammea* and *S. picta* than in the better known *S. ruticilla*. Like the rest of the *Mniotiltidae*, they are restless in the pursuit of food, thoroughly searching every twig and leaf, even the bark of the main stem, for insects of every kind that may there lie hidden.
- ✓ 13. BASILEUTERUS DELATTRII (Bp.) : Sclater, P. Z. S. 1860 (May 8th).
Dueñas. Two specimens only were obtained of this species, as distinguished (*l. c.*) from its near allies, *B. rufifrons* of Mexico and *B. mesochrysus* of New Granada.
- ✓ 14. EUTHLYPIS LACRYMOSA (Cab.) : Mus. Hcin. p. 19.
Alotenango, September 1859. Much nearer a *Setophaga* in its habits than anything else. Most of the *Setophagæ* may at once be recognized by the curious way they have of keeping the tail expanded and swaying it from side to side.
- ✓ 15. VIREO NOVEBORACENSIS (Gm.).
Coban, November 1859. Only one example, agreeing with N. American specimens.
- ✓ ✕ 16. CHAMÆOSPIZA TORQUATA (Du Bus) : Sclater, P. Z. S. 1858, p. 304.
Volcan de Fuego, September 1859. This bird I have only found in the Volcano. It skulks about the thick underwood, and scratches among the dead leaves for its food.
- ✓ ✕ 17. BUARREMON ALBINUCHUS (d'Orb. & Lafr.) : Sclater, Syn. Av. Tan. p. 24.
Coban, November 1859. A very shy bird.
- ✓ 18. EUCOMETIS SPODOCEPHALA (Bp.) : *Chlorospingus spodoccephalus*, Bp. Notes Orn. p. 23.

11. Dueñas.

12. = B. culicivorus. V. de Fuego, Coban, Choctum &
from Cabobon to San Luis.

13. Coban.

14. Savana grande.

v. 16 = Pygisoma leucote, Cab. Bill black: iris dark: tarsi
and toes grey: long: tot. abg: cauda 4.5 — Medio-Monte
29 Oct. 1873 —

17. ? young of B. chrysopogon / ponticus gutturalis, Laf.) B. gutturalis
occurs in Mexico & Columbia but I have never seen
specimens from any intermediate locality. —

22 Santa Barbara, V. de agua & Fuego, Coban.

Vera Paz. Having obtained this species from Don Vicente Constancia, I am unable to say whether it is from Coban or the low lands.—O. S.

This bird is no *Chlorospingus*, as placed by Bonaparte, but a very close ally of *Eucometis cristata* of my 'Synopsis,' and perhaps hardly sufficiently distinct from it.—P. L. S.

- ✓ 19. *EUPHONIA MINUTA* (Cab.) : Sclater, Syn. Av. Tan. p. 100.
Coban. I obtained only a single specimen of this *Euphonia*.

- ✓ 20. *DENDROCOPS MULTISTRIGATUS*, Eyton, Contr. Orn. 1851,
p. 75.

S. Cruz, Vera Paz, December 1859. This is probably Mr. Eyton's species, as indicated above. It differs from the South American *D. platyrostris* (Spix) (which it greatly resembles) in having a longer, narrower, and paler bill.—P. L. S.

- ✓ 21. *MITREPHORUS FULVIFRONS* (Giraud) : Sclater, Ibis, 1859,
p. 442.

Dueñas. A single specimen.

- ✓ 22. *CHRYSOMITRIS NOTATA* (Du Bus) : Bp. Conspl. p. 516.
Volcan de Fuego, August 1859. It was on the edge of the deep ravine that divides the fire-cone from the other two of the Volcan de Fuego, in the stony, desolate waste lying on the eastern side of the last-mentioned cones, that I first met with this beautiful Goldfinch. I have since found it at Coban, and on the hills between San Juan Sacatipequez and Antigua, but did not obtain specimens from either locality. This is much more of a true Goldfinch than *C. mexicana*.

- ✓ 23. *ICTERUS MENTALIS* (Less.).
San Gerónimo, December 1859. One of the commonest of the many *Icteri* of this place.

- ✓ 24. *CHORDEILES VIRGINIANUS* (Gm.).
Coban, Vera Paz. These different species of Night-jars are not easily to be distinguished on the wing.

- ✓ 25. *ANTROSTOMUS VOCIFERUS* (Wils.).
Coban and San Gerónimo.

26. PETASOPHORA DELPHINÆ.

Coban, Vera Paz, November 1859.

✓. 27. HELIOMASTER LONGIROSTRIS.

Dueñas, August 25, 1859.

28. COCZZUS ERYTHROPHTHALMUS (Wils.): Baird's Rep.
p. 77.

Dueñas, September 2nd, 1859. This bird I shot in a willow-tree near the lake. It was alone, and the only one I have seen. Don Vicente Constaneia has another skin of the same species.

29. BUBO VIRGINIANUS (Gm.).

Dueñas, August 18th, 1859, and San Gerónimo. This Eagle-Owl is a resident species at Dueñas, and I believe throughout the whole country. It is not uncommon: a favourite locality near the former village being one of the hill-sides, which is in most parts well covered with low trees and shrubs, and here and there a rocky precipice. I have met with the bird not unfrequently during the afternoon. At all hours of the night they make their proximity known by their deep ery.

30. COLUMBA FASCIATA, Say: Baird's Rep. p. 597.

Volean de Fuego (6000 feet) and Coban. This Pigeon is common in the high forests of the Voleano.

31. ODONTOPHORUS THORACICUS (Gambel): *O. lineolatus*,
Gould, Mon. Odont. pl. 32.

Volean de Fuego, August. This is perhaps the commonest *Ortyx* found in the Volean de Fuego. The ravines of this Voleano are localities very favoured by several species of the group. It is not often, however, that they are to be found actually at the bottom of the hollow, where the increasing shadow and height of the overhanging trees render the under-growth of vegetation comparatively scanty, but most frequently near the top of either side, in places where a fallen tree or a slip of soil has laid bare a sunny spot. Such situations are sought for by these birds to bask and sleep in, like Partridges in a warm hedge-side. They are, however, true forest-birds, and are usually met with in small flocks of six or eight, probably the brood of the season.

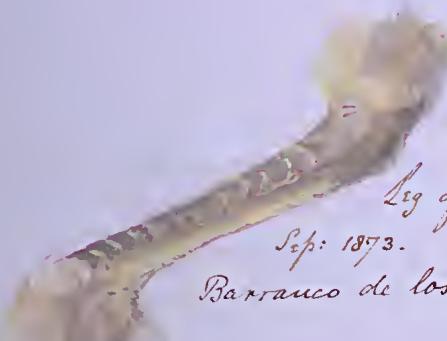
v. 27. = H. longirostris pallidiceps, Gould.

29.

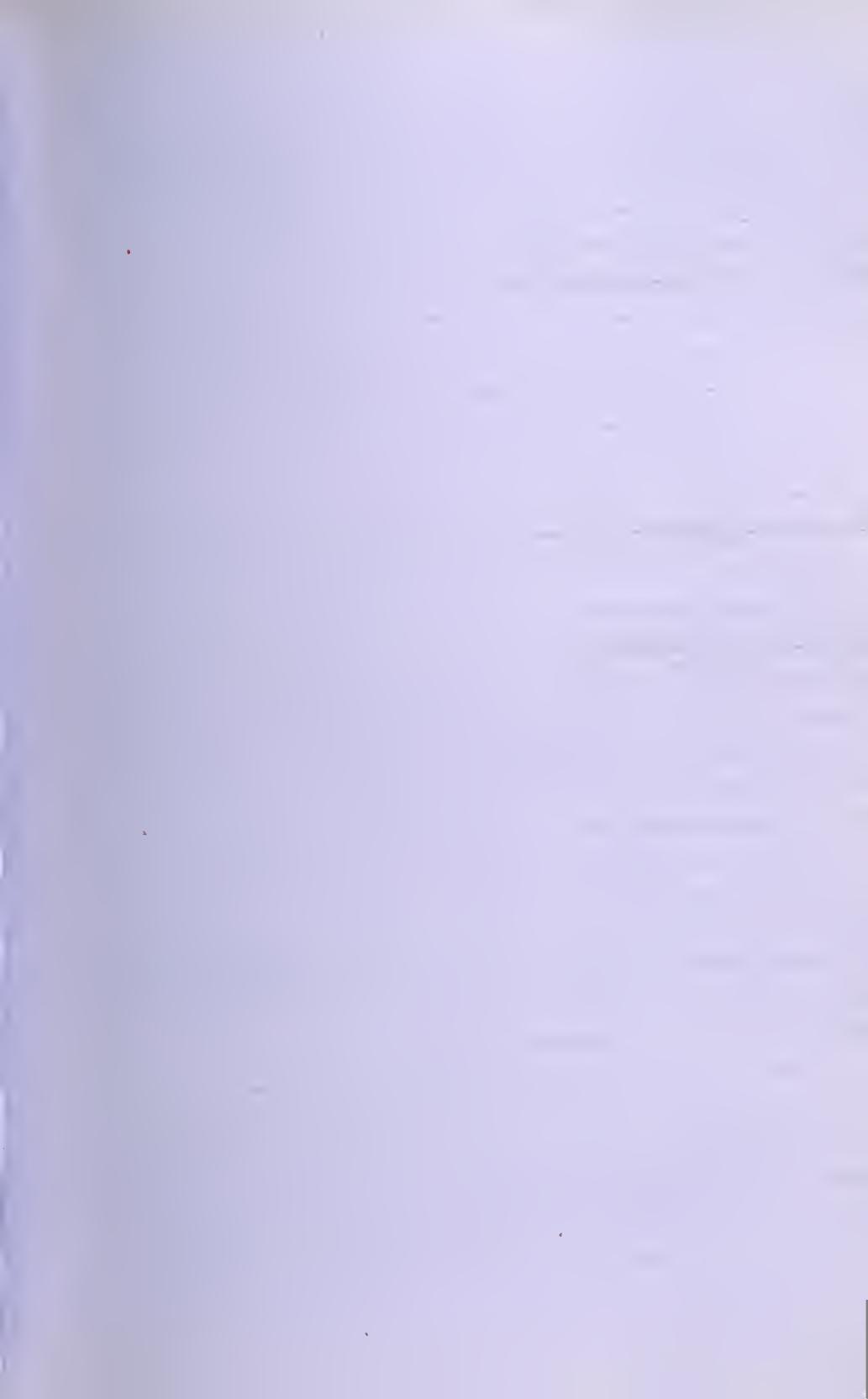
30.



Uit (Cabanero)



Leg of I. thoracicus. V. de Fuego
Sep: 1873.
Barranco de los Chocoyos, common. Feb: 1874.



32. = S. hypoleucus, Gould.

33. = M. scolopaceus, Say !

34. Lake of Atitlan.

When frightened, the whole bevy runs up the side of the ravine, and only when approached quite suddenly do they take wing. The consequence is (alas that it should be said!), that the sportsman is obliged to shoot them on the ground; and the only mode he has of quieting his conscience, is by a stretch of his imagination to suppose them "fur," and not "feather," and to take a running shot.

✓ 32. *EUPSYCHIORTYX LEUCOPOGON* (Less.) : Gould, Mon. Odont. pl. 13.

San Gerónimo. A female, probably of this species, shot in the cane-field.

✓ 33. *MACRORHAMPHUS GRISEUS* (Gm.) : Baird's Rep. p. 712.
San Gerónimo. A single specimen shot at San Gerónimo.

✓ 34. *PHALAROPUS HYPERBOREUS* (Linn.).

Ducñas, August 1859. I have never observed but four birds of this family in Guatemala. They had apparently but just arrived, and were swimming slowly about on the lake, picking at the weeds, &c. They showed the usual absence of timidity attributed to these birds. No others followed these four, which may probably have formed a brood of the season. Since obtaining these, I discovered in the collection of Don Vicente Constancia a specimen of the same species; he also had another species, which will probably prove to be *P. wilsonii*. Both these had been procured from near the city of Guatemala.

✓ 35. *RALLUS VIRGINIANUS*, Linn. : Baird's Rep. p. 748.

Antigua Guatemala, September 1859. A single specimen only, a female, was brought me. It was killed in one of the cochineal plantations.

✓ 36. *CORETHRURA RUBRA*, Sclater and Salvin, P. Z. S. 1860 (May 16th).

Coban, Vera Paz, November 1859. Also in the collection of Don Vicente Constancia, and previously transmitted by Mr. Skinner.

37. *FULIGULA COLLARIS* (Don.) : Baird, Rep. p. 792.

Coban, Vera Paz, November. Ducks frequent the river of Coban in some numbers.

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✓ 38. PODICEPS DOMINICUS (Linn.).

Lake of Ducñas, October 13th, 1859.

✓ 39. STERNA FRENATA, Gambel : Baird, Rep. p. 864.

This skin I bought in Coban, and am not sure where it was procured.

XXXIV.—*Note on the Egg and Nestling of the Californian Vulture.* By PHILIP LUTLEY SCLATER.

(Plates VIII. and IX.)

MR. J. H. GURNEY has kindly supplied, for the use of this Journal, the two accompanying plates, which represent the nestling and egg of the Californian Vulture (*Cathartes californianus*). They are copied from drawings (made by Mr. Reeve of the Norwich Museum) of the specimens (forwarded to Mr. Gurney by his correspondent, Mr. A. S. Taylor, of Monterey), which have already been alluded to in these pages*. The circumstances of the discovery of the two nests, one of which contained the young bird, supposed to be about from five to seven days old (Plate VIII.), and the other the egg (Plate IX.), having been already given, as also a sufficient description of the specimens, it is not necessary to repeat them. But it may be as well to remark, that in Dr. Brewer's valuable work on 'North American Oology' (p. 7), the egg of the Californian Vulture is described, from a drawing of a specimen said to have been laid in confinement at the Jardin des Plantes, as somewhat different from the one represented here. The dimensions there given ($3\frac{1}{4}$ by $2\frac{1}{6}$) would indicate a considerably smaller egg than the present specimen. The ring of reddish-brown blotches in the egg of the Jardin des Plantes is perhaps of less significance, as many of the *Vulturidae* lay sometimes spotted and sometimes colourless eggs (see Mr. Salvin's remarks on the eggs of *Gyps fulvus* in this Journal for last year, p. 179). But it is certainly a reversal of what is generally the case, to find a white egg laid by a Vulture in a wild state, and a coloured egg laid by a bird in confinement; and, on the whole, it would be well not to place too much confidence in the drawing spoken of by Dr. Brewer.

* See 'Ibis,' 1859, p. 469.

v. 39 = Hydrochelidon fuscipes .

Time was, and not so long ago, when *Pelecanus crispus* lived in hundreds all the year round, from the rocky promontory of Kourtzolari, hard by the mouth of the Aeheloüs, on the western extremity of the lagoon, to the islands of Ætolico, up its northern arms, and, on the east, to the great mud-flats which mark the limits of the present delta of the Phidaris. Now-a-days a solitary individual may be seen fishing here and there throughout the lagoon, but the small remnant of this onee mighty host have made their last stand upon the islands whieh divide the Gulf of Proeopanisto from the Gulf of Ætolieo. Here, towards the end of February last, the eommunity of Pelicans constructed a group of seven nests,—a sad falling-off from the year 1858, when thirty-five nests, the remains of which had not then disappeared, were grouped in contiguouos proximity upon a neighbouring islet. It needs not the nose of a pointer to discover the locality, even if the large white birds themselves were not a sufficient guide. As we approached the spot in a boat the Pelicans left their nests, and taking to the water, sailed away like a fleet of stately ships, leaving their newly-built establishment in possession of the invader. The boat grounded in 2 or 3 feet of mud, and when the party had floundered through this, the seven nests were discovered to be empty. A fisherman had plundered them that morning, taking from each nest one egg, all of which we of course recovered. The nests were constructed in a great measure of the old reed palings used by the natives for enclosing the fish, though with these were mixed such pieces of the vegetation of the islet as were suitable for the purpose. The seven nests were contiguouos, and disposed in the shape of an irregular cross,—the navel of the cross, whieh was the tallest nest, being about 30 inehes high, the two next in line on each side being about 2 feet high, the two nests forming each arm of the cross a few inehes lower, and the two extremes at either end being about 14 inehes from the ground. These latter, it is presumed, were intended for the junior partners of the firm, in the same way that the great bear of nursery tales has a big seat, his wife a middling seat, and the little bear a small seat. The eggs are ehalky, like those of the *Pelecanidæ* generally, very rough in texture, and some of them much streaked with blood.

Ibis
1860.

XLIX.—*Contributions to the Ornithology of Guatemala.* By
 OSBERT SALVIN and PHILIP LUTLEY SCLATER. (Part III.)
 (Plate XIII.)

[Concluded from page 278.]

ON leaving Coban, in November 1859, I engaged Cipriano Prado, a resident of that town, to proceed to the coast-region of the north to collect birds for me. This man was absent nearly four weeks, and returned with a series of about 400 skins. At the same time his brother, Juan Prado, also got together some 200 more from the Indians of Coban and its neighbourhood. During the months of January and February 1860 I was myself collecting at Dueñas, and made a short excursion to Escuintla. Thence I returned in March, *via* Dueñas, to Vera Paz, and obtained a few birds by the way on the Rio Motagua.

At San Gerónimo my friend Mr. Owen had during these months made a small collection, which contained several species I had not previously noticed in Guatemala. All these, with a few that I collected in the mountains of Vera Paz in the month of March last, form the principal part of my last collections, the rest being made up by two small lots, one from Tactic, and the other from Cajabon.

The whole number of skins thus assembled amounts to nearly 1000, belonging to about 220 species, of which 46 are new to the fauna of Guatemala.—O. S.

To these 46 species 6 more may be added, as now satisfactorily ascertained to be found within our limits, making in all 52 additional species. After erasing the names of a few from the first list, whose occurrence in Guatemala has not been confirmed, the whole Avifauna of that country includes 503 species—a larger number probably than would be found in any country of equal area yet explored.

We now give the names of the additional species, as we have determined them, the remarks on the localities and habits being added by Salvin.

✓

1. *TURDUS MIGRATORIUS*, Linn. N. A.

Coban. This is probably the usual southern limit of this bird,



J. 2 = J. modestus, Cab. Savana grande, Coban.

3. ♂ Hemicotina leucophrys, Tsch.
V. de Fuego.

J. 5 = P. inornata, Baird. Choctum.

b Coban, Choctum.

10 "Shalan" (cobanero). Coban + Forest N to Psten.

one specimen only having been obtained, though it has been noticed as a straggler in some of the southern Antilles.

✓ ✓ 2. *THRYOTHORUS FELIX*, Selater?

Eseuintla. This Wren is most like *T. felix* of Oaxaea, described P. Z. S. 1859, p. 371; but a single specimen only being in the collection, makes its determination not quite satisfactory.

✓ 3. *CYPHORHINUS GRISEICOLLIS* (Lafr.): *Scytalopus griseicollis*, Lafr. Rev. Zool. 1840, p. 103; *Thryothorus guttatus*, Hartl. Syst. Verz. Mus. Brem. p. 28 (1844).

Volcan de Agua, January 1860. This bird is the one mentioned at p. 272. It appears distinct from the *C. prostheleucus*, of which Cipriano Prado obtained many specimens near Choetum, in the tierra caliente, to the north of Coban. The true *C. prostheleucus* seems to be found in the hot country only; while this bird is an inhabitant of a much more temperate region, and seems identical with the species of New Granada.

✓ 4. *POLIOPTILA ALBILORIS*, Selat. et Salv. P.Z.S. 1860, p. 298.

I shot a single specimen of this bird near a place called Choaeus, in a valley leading into that of the Rio Motagua.

✓ ✓ 5. *PARULA BRASILIANA* (Licht.).

Cipriano Prado's collection contained a single specimen of a *Parula* apparently of this South American species, which has not hitherto been noticed so far north.

✓ 6. *HELMINTOPHAGA CHRYSOPTERA* (Linn.): Baird, Rep. p. 255. N. A.

A single specimen from Choetum.

✓ 7. *GRANATELLUS SALLAEI*, Selat. P. Z. S. 1856, p. 92.

A single specimen in the collection from Cajabon.

✓ 8. *HYLOPHILUS OCHRACEICEPS*, Selater, P. Z. S. 1859, p. 375. Several specimens in the collection from Choetum.

✓ 9. *HYLOPHILUS CINEREICEPS*, Selat. et Salv. P. Z. S. 1860, p. 299. Two specimens from the same locality as the last.

✓ 10. *MYIADESTES UNICOLOR*, Selater, P. Z. S. 1856, p. 299.

A common species about Coban, and throughout the greater part of the mountainous parts of Vera Paz. Though of the same

character, its song differs considerably from that of *M. obscurus*, and is perhaps the more melodious of the two.

- ✓ 11. **PASSERCULUS ALAUDINUS**, Bp.: Baird, Rep. p. 446. N.A.
Obtained among low shrubs near the lake of Dueñas.
- ✓ 12. **HÆMOPHILA RUFICAUDA**, Bp.: *Chondestes ruficauda*, Bp. Compt. Rend. xxxvii. p. 918 (1853).
Valley of the Rio Motagua, inhabiting the sterile parts where Cacti and Mimosæ chiefly grow.
- ✓ 13. **ORYZOBORUS FUNEREUS**, Sclater, P. Z. S. 1859, p. 378.
One specimen from Choctum.
- ✓ 14. **COCOTHRAUSTES MACULIPENNIS**, Sclater, P. Z. S. 1860, p. 251, pl. 163.
One specimen from Alotenango. This should have been included in our last list. There were two birds where I shot this; the other I was unable to secure.
- ✓ 15. **ICTERUS MACULIALATUS**, Cassin, Journ. Acad. Philad. i. p. 137, pl. 16. fig. 1.
Volcan de Fuego. Two examples, ♂ ♀. One of these rare *Icteri* was brought to me by José Ordoñez, the hunter of *Oreophases*, the day before I left Dueñas. The other I shot myself in the Volcano.—O. S. Besides these, I have only seen the examples in the collection at Philadelphia, which are marked 'Coban.'—P. L. S.
- ✓ 16. **QUISCALUS SUMICHRASTI**, De Saussure, Rev. Zool. 1859, p. 119.
This bird differs a good deal from a true *Quiscalus* both in its cry and habits. I only met with it in Vera Paz, never in other parts of the republic; nor is it found about San Gerónimo,—first occurring on the high part of the road to Tactic.
- ✓ 17. **ANABAENOPS VARIEGATICEPS**, Sclater, P. Z. S. 1856, p. 289.
In Cipriano Prado's collection from Choctum, as also the following four species.
- ✓ 18. **DENDRORNIS FLAVIGASTRA** (Sw.).
Choctum, January 1860.

- 11 Coban, Petén, Retalhuleu.
- 12 Valley of the Motagua or Rio grande below Chol.
Guatán to Guastatoya. Acajutla (?)
- 13 Choctum.
- v. = C. abillaei, Less. Coban, San Jerónimo, ~~V.~~
V. de Fuego, Chiapas. —
16. Coban.
17. Savana grande, Choctum.

V. de Fuego

25. La Trinidad, 29 Oct. 1873. Bill black mandible fleshy yellow.
Iris dark; tarsi & toes slate-colour. Long: tot: absy: cauda 4:4.

- ✓ 19. *THAMNISTES ANABATINUS*, Sclat. et Salv. P. Z. S. 1860, p. 299.
Choctum, January 1860.
- ✓ 20. *DYSITHAMNUS SEMICINEREUS*, Sclater, P. Z. S. 1855, p. 90, pl. 97.
Choctum, January 1860. These specimens seem undistinguishable from the New-Granadian bird.
- ✓ 21. *RAMPHOCÆNUS RUFIVENTRIS*, Bp.
Choctum, January 1860. Cipriano also shot a specimen of this bird while with me at Lanquin.
All these appear to be birds exclusively frequenting a hot country.
- ✓ 22. *TYRANNUS CRASSIROSTRIS*, Swains. Quart. Journ. Sc. xx. p. 273.
Escuintla, January 1860.
- ✓ 23. *MYIOBIUS SULPHUREIPYGIUS*, Sclater, Ibis, 1859, p. 442.
Choctum, in Juan and Cipriano Prado's collections. A bird of the hot region.
- ✓ 24. *PYROCEPHALUS MEXICANUS*, Sclater, P. Z. S. 1859, p. 45.
Don Vicente Constancia has one specimen of this bird. I never met with it myself; but it is included in Moore's list of the Birds of Honduras collected by Leyland.
- ✓ 25. *CYCLORHYNCHUS BREVIROSTRIS*, Cab.
In the collections from the hot district of Choctum; also the following.
- ✓ 26. *CYCLORHYNCHUS CINEREICEPS*, Sclater, Ibis, 1859, p. 443.
Of this bird I also shot one example at Escuintla.
- ✓ 27. *PLATYRHYNCHUS CANCROMINUS*, Sclat. et Salv. P. Z. S. 1860, p. 299.
From Choctum.
- ✓ 28. *TODIROSTRUM SCHISTACEICEPS*, Sclater, Ibis, 1859, p. 444.
Choctum.
- ✓ 29. *LEPTOPOGON AMAUROCEPIHALUS*, Cab.
Choctum. A Tyrannine of this genus agreeing with Mexican

examples referred to in P. Z. S. 1859, p. 384, but not yet certainly identified with the S. American *L. amaurocephalus*.

- ✓ 30. **CAMPTOSTOMA IMBERBE**, Sclater, Ibis, 1859, pl. xiv.
fig. 1.

I shot a single specimen, the second only which has been procured of this little bird, at Escuintla. I saw several others in the neighbourhood, but was unable to secure them.

- ✓ 31. **TYRANNULUS SEMIFLAVUS**, Selat. et Salv. P. Z. S. 1860,
p. 300.

One specimen only, shot by Cipriano Prado at Choctum.

- ✓ 32. **HETEROPELMA VERÆ-PACIS**, Sclat. et Salv. P. Z. S. 1860,
p. 300.

Also shot by Cipriano Prado at Choctum.

- ✓ 33. **LIPAUGUS HOLERYTHRUS**, Sclat. et Salv. P. Z. S. 1860,
p. 300.

Seems to be found in the same localities as *L. unirufus*, viz. in the tierra caliente of Vera Paz. I never obtained *L. rufescens*, a specimen of which, said to be from Coban, is in the British Museum.

- ✓ 34. **TITYRA ALBITORQUES** (Du Bus).
One example, a male, from Choctum.

- ✓ 35. **HELIOTHRIX BARROTI**, Gould, Mon. Troch. pt. vi.
The 'Columbian Fairy,' as Mr. Gould calls this species, seems, from all the accounts I could hear, to be far from scarce in the tierra caliente of the upper parts of the Rio de la Passion, occurring rarely at Choctum, but more abundantly at Chisee, a place further to the northward, in the direction of Peten. It is found also on the Rio Polochic, where I saw one specimen as I was riding from Teleman to Panzos to embark in a canoe to proceed to Yzabal.

- ✓ 36. **HYLOMANES MOMOTULA**, Licht.
Choctum.

- ✓ 37. **CILORONERPES OLEAGINEUS**, Reichb.
Choctum.

36. La Trinidad. 29 Oct. 1873. Eye dark; tarsi & toes yellowish as
in M. gularis. See p. 37. Bill as in that sp. the point of the maxilla being
black. Long. tot. abg. crada 5.0.

No. 37. = C. cabote, Makh.

⁵fig. = B. albicandatus vel pteroles.



²45. Head & foot of Grottygona
albifacies, V. de Fuego, Sep. 1873.

✓ 38. CONURUS PETZII (Hahn).

A common species about some hot springs near the Rio Motagua.

✓ 39. PIONUS HÆMATOTIS, Selat. et Salv. P. Z. S. 1860, p. 300.
(Plate XIII.)

This beautiful Parrot is known to the Indians of Vera Paz as the 'Khel.' It is said to be far from uncommon in the tierra caliente; and during the time that the maize is ripe at Coban, it is one of the species that commits the greatest depredations on the crops. In the month of March (1860), when I was in the mountains in search of Quesals (*Pharomacrus paradiseus*), a small flock used to frequent the neighbourhood of one of our camps. Owing to the great height of the trees on which they usually sat, I was only able to secure one specimen. Cipriano Prado brought two others from Choetum.

✓ 40. CHRYSOTIS AUTUMNALIS (Linn.).

I am not aware of having met with this species in a wild state, but it is frequently seen in cages in Guatemala. It is said to be common in the tierra caliente of Vera Paz. Juan Prado brought two from those districts, one of which died and was preserved.

✓ 41. BUTEO FULIGINOSUS, Sclater, Trans. Zool. Soc. vol. iv. p. 267, pl. 62.

Juan Prado procured me one specimen of this Buzzard. It was brought to him by an Indian.

✓ ✓ 42. BUTEO ERYTHRONOTUS, King : Strickl. Orn. Syn. p. 34.
Don Vieente Constaneia has an adult example of this bird, shot near Antigua Guatemala.✓ 43. ACCIPITER COOPERI, Bp. : Baird, Rep. p. 16.
One specimen, in immature dress, in Juan Prado's collection.

✓ 44. PHOLEOPTYNX HYPOGÆA (Bp.).

One specimen, obtained at San Gerónimo by Mr. Owen. I saw another, decayed, lying on the thatch of a rancho at Lanquin.

✓ ✓ 45. GEOTRYGON ALBIFACIES, Sclat. P. Z. S. 1858, p. 98.

✓ 46. GEOTRYGON MONTANUS (Linn.) : Bp. Conspl. ii. p. 72.
Both these Pigeons are found in the forests of Vera Paz.

- ✓ 47. *COLUMBA* — ? —
Choctum. A single specimen of a Pigeon, probably referable to *Columba vinacea*, Temm.
- ✓ 48. *LEPTOPTILA RUFAXILLA*.
Both these Pigeons are also from the hot districts.
- ✓ 49. *PLATALEA AJAJA*, Linn. N. A.
Soon after I left Guatemala in 1858, a Rosy Spoonbill was killed by an Indian near the lake of Dueñas. Don Vicente Constance now has this specimen stuffed.
- ✓ 50. *EUDOCIMUS ALBUS* (Linn.): Bp. Conspl. p. 156. N. A.
When coasting up the Belize territory in April last (1860), I saw two specimens of the White Ibis near Golden Stream Keys.
- ✓ ✓ 51. *EUDOCIMUS RUBER* (Linn.): Bp. Conspl. ii. p. 157. N. A.
Mr. George Baily informed me that this bird is very common at certain seasons about the shores of the lake of Yzabal.
- ✓ 52. *CHAUNA DERBIANA*, G. R. Gray.
This fine Screamer is probably peculiar to the forests of Central America. The type-specimen (which, as we have been kindly informed by Mr. T. S. Moore, the Curator of the Derby Museum at Liverpool, is now stuffed in that collection) was received from Mr. Bates, the collector, by the late Lord Derby in 1843. It was captured alive at Peten, and kept living for four months by cramming it with food. A second and finer example in the same collection is labelled as having been purchased from Mr. Leadbeater in 1843. We are not aware of the existence of this bird in any other European collection.

L.—*Letter from Dr. G. BENNETT respecting a new Cassowary.*
(Plate XIV.)

[THE following letter from Dr. George Bennett relates to the new Cassowary lately received by the Zoological Society of Amsterdam, the existence of which has been alluded to in a recent number of the 'Annals of Natural History*.' The accompanying illustration (Plate XIV.) is copied from the drawing of the head of this interesting bird, kindly communicated to us by Dr. Bennett. Mr. Blyth has also been good enough to forward

* Ser. iii. vol. vi. p. 113, note (Aug. 1860).

v. 47 = L. migratorius, Sch.

48 = L. plumbeiceps, Sch. & Salw.

v. 51. Does not occur in Cent. Am.



On the Anatomy of Cephalopterus penduliger. 57

2½ in. long, and bulging at the end ; left one 2½ in., and of uniform size throughout.

121. *PORZANA PHœNICURA* (Penn.).

In a cage for sale at the city-gate. I was informed that it was caught in the neighbourhood of Canton.

122. *PORZANA ERYTHROTHORAX* (Temm.) : Faun. Japon. pl. 78. p. 121. Cantonese, “*Loug kai.*”

The pretty female of this species that I forward home was procured at Canton.

Length 8 in., wing 4½, expanse 1. Tail consisting of ten soft feathers nearly 2 in. long. Bill : along culmen $\frac{7}{8}$, along edge of under mandible 1 in. ; of a leaden blue colour, blackish on the roof ; the angle of the mouth reddish. Eye-rim vermillion ; iris bright Indian red. Tibia naked for $\frac{7}{8}$ in., tarsus 1½ in. ; mid-toe 1½ in., its claw $\frac{2}{3}$. Legs bright madder-pink ; soles pale dingy yellow, with sharp claws.

Tibial tendons rigid. Gizzard roundish, about $\frac{7}{8}$ in. in diameter, flattened, and somewhat muscular, lined with a moveable greenish cuticle set with broad rugæ. Cæca situate 1½ in. from anus ; left $\frac{3}{5}$ long, right $\frac{1}{2}$, both of uniform size throughout.

It would be needless to add here a list of the marine *Scolopacidae*, *Anseridae*, &c., because it is pretty certain that all these migratory sea-birds that are found at Amoy are also found at Hongkong, and therefore reference can easily be made to my Amoy list, if the reader should wish for a notice of them. I may, however, add to the list of Ducks the Shoveller,

RHYNCHASPIS CLYPEATA (Linn.),

which was brought in great abundance to the Hongkong market amongst other Ducks.

IV.—*Note on the Anatomy of Cephalopterus penduliger.*

By T. C. EYTON, F.Z.S.

I RECEIVED only the body of this bird, taken out of one of the specimens sent home by Mr. Fraser, and described, in the ‘Proceedings’ of the Zoological Society, by Mr. Selater (1860, p. 67). The greater portion of the intestines was gone.

The tongue was pointed, horny at the tip, arrow-shaped; the epiglottis fringed with bristles, their points directed backwards; the trachea 0·4 (inch) in diameter in its upper portion for one inch, thenee gradually dilated into an oblong bulb, which becomes 0·7 (inch) in diameter at its widest part near the centre. Immediately below the bulb the traheea is contracted to a width of 0·3 (inch), but again gradually increases in size to the bronchia, which are very large and increase in size to the sixth ring, afterwards rapidly deereasing. The sixth ring is very broad in comparison with the other bronchial rings attached to it. There are two large oval glands, one on the outer side and one on the inner side, between the branchees of the bronchia. The trachea is furnished with the usual sterno-tracheal muscles, a few fibres decending from them to the sixth ring. The œsophagus is large in diameter, and swells out into a capacious crop, which was much damaged in the present specimen. It is eontracted below the erop, but again beeomes enlarged to the proventrieulus, which is slightly thickened, smooth internally, and lined at its lower extremity by the epithelium.

The stomach, whieh was filled with hard seeds about the size of a small hazel-nut, is slightly museular, 2 inches long by 1½ inch in diameter; the epithelium is slightly hardened, and corrugated longitudinally. The liver is bilobed.

1861. V.—*On the Nesting of some Guatemalan Birds.* By ROBERT OWEN, C.M.Z.S. With Remarks by OSBERT SALVIN, M.A., F.Z.S.

(Plate II.)

WHEN I left Guatemala in April last, Mr Owen kindly undertook to procure for me what eggs he could of the birds found about San Gerónimo. By the mail of September I received a box eontaining the result of his labours, together with the notes relating to their capture. The collection altogether comprises 102 specimens, the number of species being 23. Of these I had previously obtained six. Five of these have been already figured in this Journal, vol. i. pl. 5; and the sixth is the egg of *Sialia wilsoni*, the well-known Blue Bird of North Amercia. Amongst



1 = *A. plagiata*, Schl.
3 = *C. altipons*, Sw.

2 = *M. gibbus*. -
4 = *C. bistratus*, Wagl.

the remaining 17 we have a most valuable addition to our knowledge of neotropical birds in the egg of the Quetzal (*Pharomacrus paradiseus*), as well as in those of *Eumomota superciliaris*, *Pachyramphus aglaiæ*, *Geococcyx affinis*, *Urubitinga anthracina*, and ¹*Asturina nitida*, which, together with ²*Mimus gracilis*, *Polioptila albitoris*, *Icterus gularis*, *I. mentalis*, ³*Centurus sanctacruzi*, and ⁴*Edicnemus vocifer*, I believe to be now described for the first time. The value of these eggs is very much enhanced by the exceedingly careful way in which they have been collected. In every case but one, that of *Eumomota superciliaris*, where no mistake could have been made, one of the parent birds was procured. Each egg was written on in ink, and the bird ticketed with a corresponding number. The nests, too, which I shall describe below, have in many cases been sent. To the name of each species I have added a short description and the measurements of the egg. The rest of the paper is from Mr. Owen's pen.—O.S.

As any one who has travelled in this country will know, the drawbacks a collector has to contend with are not a few. Let these be my excuse for the smallness of my collection, which, I can assure my readers, is the result of some pretty hard work, and much exposure to a scorching sun. What disappointments the would-be naturalist has to suffer! Nests found, but the wary birds not at home when called upon. Long and fruitless vigils to be kept, gun in hand, behind some bush,—safe, as one flatters oneself, from observation, and all the while a helpless victim to swarms of delighted mosquitoes, which vie with each other in their endeavours to improve the opportunity of tasting a little European blood. Then it would appear that the powers of the unseen work to one's confusion. The other day I lost a very fine specimen of the 'Kolol' (*Tinamus robustus*?) from a "bruja" having cast upon it the evil eye. Such at least was its end according to the belief of a "carbonero" who was bringing it to me from the mountain. He was coming along cheerfully enough with the bird under his arm, when he met a female of the "bruja" family; there was no time to cover it up before the mischief was done, and the victim struggling to death, all the while uttering most unusual cries.

The first showers of the rainy season appear to be the signal for nesting to begin; but a few species seem to anticipate this, and commence operations with the rains which fall in April.

✓ 1. TURDUS GRAYII. “*Cien-sonte.*” San Gerónimo. Bird and several eggs.

The nest of this Thrush is described in ‘The Ibis,’ vol. i. p. 6, and the egg figured on pl. 5.

The nest of the “Cien-sonte” is usually to be found in the hedge-rows and stunted bushes. The bird though common, is very shy.

✓ 2. MIMUS GRACILIS. “*Cien-sonte mejicano.*” San Gerónimo, May 30, 1860. Bird and several eggs.

General colour of the egg (Plate II. fig. 2) pale greenish grey, blotched with spots of red-brown and two shades of faint lilac. Axis 1·05 in., diam. ·7.

I see in my note-book that at this date (May 30) the breeding-time of this species is very advanced, it being among the earliest to begin building. Most of the nests I have taken were in the Nopales or cochineal-plantations, the nests being placed in the cactus. They are also to be found in the hedge-rows and bushes of the plain, usually in somewhat exposed places, about 5 or 6 feet from the ground. I have unfortunately neglected to send the nest, which is peculiar in having its rim or edge crowned with a circle of long thorns. The complement of eggs is three, and frequently two or three eggs of the “Tordito” (*Molothrus aeneus*). In one instance I found in the same nest two eggs of the Moek-bird and five of the “Tordito.”

The “Cien-sonte mejicano” is a shy bird, and does not easily fall a victim to the bird-eaticher, by whom it is much persecuted for its unrivalled powers of song. I have known as much as six and even ten dollars refused for a good songster.

3. SIALIA WILSONI. “*Azulejo.*” Bird and four eggs.

The eggs of this bird are too well known to need description.

Four eggs, without nest, which was destroyed, from the high coarse grass which grows in the uncultivated parts of the cane-field.

$f_2 = \underline{m.} \underline{gibbus}$.

∴ b = P. chalybra.

- ✓ 4. **POLIOPITLA ALBILORIS.** Choacus, May 15, 1860. Female bird, nest, and four eggs.

The nest is composed outwardly of dried stalks of grass and roots, with a coating of cobweb and other adhesive materials. The interior lining consists of the feathery parts of seeds, horse-hair, and fine grass, the whole forming a very neat, compact structure, measuring $1\frac{3}{8}$ ineh across the inside, and $1\frac{1}{2}$ ineh in depth.

The eggs (Plate II. fig. 3) are white, spotted with red, principally of two shades, the spots increasing in number towards the obtuse end. They measure, axis .6, diam. .45 in.

The nest was procured from Choaeus, near the Rio Montagua, the same locality whence the male specimen was obtained from which the description in P.Z.S. 1860, p. 298, was taken.

Female bird, nest, and four eggs advanced in incubation. The nest was taken in the "*monte bajo*" (low brushwood) growing almost under the eaves of one of the ranchos.

- ✓ 5. **COTYLE SERRIPENNIS.** "*Golondrina.*" San Gerónimo, May 20, 1860. Bird, nest, and five eggs.

The nest is composed of grass and fine roots, the inside being strewn with pieces of dead flag.

The eggs are white, and measure, axis .7, diam. .5 in.

The nest was dug out of the white sandy soil of a barranco in the Convent garden. The eave ran horizontally, and was about 2 feet in length, terminating in a chamber of just sufficient dimensions to allow the bird to turn round.

- ✓ ✓ 6. **PROGNE DOMINICENSIS.** Female bird and four eggs.

The eggs are white, and measure, axis, .85, diam. .63 in.

Mr. Owen has sent no note with these eggs.

- ✓ 7. **MOLOTHRUS AENEUS.** "*Tordito.*" San Gerónimo, June 2, 1860. Several eggs.

The eggs are pale greenish white, and measure, axis 1 ineh, diam. .75.

A few eggs of the "*Tordito,*" taken from the nests of the "*Choreha*" (*Icterus*) and the "*Cien-sonte mejieano*" (*Mimus gracilis*). The Indians here all identify these eggs as those of the "*Tordito.*" However, personally, I have never surprised the bird

on the nest of any other species. At the same time I may add that I have never seen it either building or occupied in any other domestic occupation whatever, which somewhat confirms the statement aforesaid. The eggs are found most commonly in the nests of the "Chorcha" and the "Cien-sonte mejicano," and occasionally in that of the largest species of "Chatillo" (*Pitangus derbianus*).

✓ 8. *ICTERUS GULARIS.* "Chorcha." San Gerónimo, June 8, 1860. Hen bird and one egg.

The egg is a pale grey, blotched and streaked with very dark brown. It measures, axis 1 in., diam. .7.

Mr. Owen describes the method of taking the nests of these *Icteri* in the note attached to the next species.

✓ 9. *ICTERUS MENTALIS.* "Chorcha." San Gerónimo, May 5, 1860. Several birds' nests and eggs.

The materials used by this bird for its nest—and doubtless the same applies to the foregoing species—vary considerably; the structure, however, is the same in all. It is a compact and firmly woven nest, attached at the top to the ends of a bough, its length varying from 1 to 2 feet. In some, the materials used are fine dried creepers and twigs, with here and there a leaf; in others, fibrous roots and the stringy centres of the Maguey leaves; while others are formed exclusively of a species of *Tillandsia*. All are spherical at the bottom, and have a long loophole at the top for the entrance.

The eggs (Plate II. fig. 5) are like the last—a pale grey, spotted and streaked with very dark brown; on some there are marks of faint lilac. They measure, axis, 1.05 in., diam. .7.

The "Chorcha" generally nests in colonies of four or five; I have never found more together: but it not unfrequently selects a completely isolated spot for its graceful, pendent nest. The breeding-place is mostly chosen on the banks of rivers or upon some tributary stream, over which the nest swings securely in the breeze. At first I experienced some difficulty in taking these nests, as they hang from the extreme points of the boughs, and, being rarely less than 18 feet from the ground, are inaccessible to the climber. The only way to obtain them is to



provide oneself with a long light cord with a running noose at the end, and a few wild canes lashed together, so as to make two rods of the required length. At the extremity of one a bush-knife must be tied firmly, so that when the rod is held up with the knife uppermost, it points to the ground, the edge facing the cane at a small angle. By means of the other rod the noose is slipped over the nest a little below the aperture through which the bird passes, and the other end left hanging down. When the bird returns to the nest the string is drawn tight, and nothing remains but to cut the twig by which the nest hangs, with the knife, first twisting the other rod into the top of the nest, so as to lower it gradually when free. The number of eggs laid by one bird is two. There are, however, often eggs of the "Tordito" in the nest.

- ✓ 10. *CYANOCITTA MELANOCYANEA*. "Charra." San Gerónimo, April 29, 1860. Bird and several eggs.

The nest and egg of this species are described in 'The Ibis,' vol. i. p. 21, and the egg figured on pl. 5.

The nest is invariably found in low thick bushes, about 6 feet from the ground.

- ✓ 11. *PITANGUS DERBIANUS*. "Pecho amarilla." San Gerónimo, April 10, 1860. Bird, two nests, and several eggs.

The nest and eggs of this bird are described in 'The Ibis,' vol. i. p. 120, and the egg figured on pl. 5.

Among the eggs sent, there is considerable variation in size and colouring. Three correspond with the figure; the rest are much more distinctly spotted, with smaller and darker spots.

One of the nests I send has two openings; one, however, seems to be the rule: they are usually built at the ends of boughs, at various elevations from the ground, but always exceeding 8 feet. A favourite haunt is the Banana groves, where their nests may be found firmly wedged in among the golden clusters of the Banana fruit.

- ✓ 12. *TYRANNUS MELANCHOLICUS*. "Pecho amarilla." San Gerónimo, May 10, 1860. Hen bird, two nests, and several eggs.

The nest and egg of this species are also described in 'The Ibis,' vol. i. p. 121, and the egg figured on pl. 5.

The nest of this bird is built upon the tops of low bushes or

hedges, 7 or 8 feet from the ground, the site chosen being free from overhanging branches.

✓ 13. *Myiozetetes texensis*. San Gerónimo, May 5, 1860. Male and female bird, nest, and several eggs.

The nest and eggs of this species also are described in 'The Ibis,' vol. i. p. 123, and the egg figured on pl. 5.

✓ 14. *PACHYRHAMPHUS AGLAIAE*. Choacus, May 15, 1860. Female bird, nest, and two eggs.

The nest is composed of tendrils, strips of bark, and grass, the interior and exterior being of the same materials, which are woven so as to form a hanging nest open at the top, 2 inches deep inside, and $2\frac{3}{4}$ inches in diameter.

The egg (Plate II. fig. 4) is white, beautifully marked with pencillings of a pinkish red and occasional spots of the same colour. These markings are much blended and concentrated at the larger end. It measures, axis .95, diam. .6 in.

These eggs were in an advanced stage of incubation. The nest was built between, and hanging from, the forked branch of a sapling at the foot of the mountain. The bird was very tame.

✓ 15. *ANTROSTOMUS* —?*. Night Hawk. Mountain of Santa Barbara, April 20, 1860. Hen bird with two eggs.

The eggs are white, and measure, axis 1.05 in., diam. .8. I do not quite understand these eggs being white, except by supposing them to be accidentally so. In other respects, *i. e.* in form and texture, they agree with the eggs of other species of *Caprimulgidae*.

These eggs, two in number, were found on the ground, at the foot of a large pine-tree. There was no nest.

✓ 16. *EUMOMOTA SUPERCILIARIS*. "Torovoz." San Gerónimo, May 21, 1860. Several eggs.

The nest is described below.

The egg is glossy white, and measures, axis 1 in., diam. .8. The form of the egg is quite that of a *Merops*.

This appears to be the height of the breeding-season with the "Torovoees." They are in full song, if their croaking note may be so termed, and are as noisy and busy now as they are mute

* The species is nearly allied to (perhaps identical with) *A. vociferus*.—P. L. S.



and torpid during the rest of the year. I do not know of any sound that will convey a better idea of the note than that produced by the laboured respiration occurring after each time the air is exhausted in the lungs by the spasms of the hooping-cough.

The nest of the ‘Torovoz’ is subterranean, and is usually found in the banks of rivers, or of water-courses which empty into them. The excavation is horizontal, and at a distance from the surface, varying with the depth of the barranco or bank in which it is situated. The size of the orifice is sufficient to allow the bare arm to be introduced, the shape being round and regular for 3, or at most 9 feet, where the shaft terminates in a circular chamber about 8 inches in diameter and 5 inches high. In this chamber the eggs, usually four in number, are deposited upon the bare soil. The banks of the river which winds through the plain of San Gerónimo are full of excavations made by this bird,—that is to say, in such places where the soil is light and the bank cuts down perpendicularly. It is a simple matter to hit upon those which are inhabited, as the entrance to the abandoned ones will be found perfectly smooth, whereas the mouth of those which contain eggs or young is ploughed up in two parallel furrows made by the old bird when passing in and out. The ‘Torovoz’ is exceedingly tame, and, when startled from its nest, will, perched upon a bough a few yards distant, watch the demolition of its habitation with a degree of attention and uneasiness more easily imagined than described.

I am now never able to induce my “darky” Chus to plunge his arms into the holes to seek the eggs; so I have either to do it myself, or to dig right up to the far end. At first he was ‘*muy valiente*;’ but it enhanced one day, whilst hanging on to a root halfway down the bank of a river, with one arm buried in a ‘cueva,’ that the tips of his fingers suddenly came in contact with the damp abdomen of a fallow ‘Torovoz.’ ‘Carramba, Don Roberto!’ screamed the poor fellow, looking as white as he could through his African skin, “me pico la eulebra!” Thereupon he fell-to in good earnest, invoking the saints to save him, running over a long list of them, many of whose names I had never heard before. Not until after much digging (we had already cut a good piece of the bank down to enable him to reach

the nest), and a fair sight of the supposed reptile, would he be comforted, and then, with fervent maledictions on the genus in general, and this species in particular, he shouldered his gun and walked on in silence.

✓ 17. *PHAROMACRUS PARADISEUS*. “*Quezal.*” Mountains of Santa Cruz, June 11, 1860. Female bird and two eggs.

The egg (Plate II. fig. 1) is a bluish green, without spots or markings, its form being like that of the egg of any other Fissirostral species. It measures, axis 1·4 in., diam. 1·15 in.

These eggs and the bird were exhibited at a Meeting of the Zoological Society, November 13, 1860.

In an expedition to the mountain of Santa Cruz, one of our hunters told me that he knew of a Quezal’s nest about a league from Chilaseo, a place in the same range, and offered to shoot for me the female and bring me the eggs if I would send my servant to help him. This I accordingly did, and my man returned with the hen and two eggs. They stated that they found the nest in a hollow of a decayed forest-tree, about 26 feet from the ground. There was but one orifice, not more than sufficiently large to allow the bird to enter, and the whole interior cavity was barely large enough to admit of the bird turning round. Inside there were no signs of a nest, beyond a layer of small particles of decayed wood upon which the eggs were deposited. The mountaineers all say that the bird avails itself of the deserted hole of a Woodpecker for its nesting-place, probably founding the supposition on the evident inaptness of the bird’s beak for boring into trees.—R. O.

I think that this satisfactory account at once sets at rest the disputed points regarding the breeding of the Quezal. My own belief is, and always has been, that the male bird never incubates the eggs, but leaves that duty entirely to the female. The origin of the story of the nest being placed in a hole passing through the tree has evidently arisen from the inability of supposing any other form of nest in the hollow of a tree which could dispose of the tail of the male bird. Imagination came to the rescue, and suggested the one hole for the bird to enter, and the other for it to pass out. That the story took its origin in Guatemala I have



S. 19 = C. allifrons, Sw.

no doubt ; I have frequently had described to me such a nest, but never by one who had seen it.—O. S.

✓ 18. GEOCOCCYX AFFINIS. "*Siguamonte*," or "*Guarda camino*."

San Gerónimo, April 3, 1860. Bird and four eggs.

The egg is pure white with a smooth surface; it measures, axis 1·45 in., diam. 1·05 in.

This is a very common bird at San Gerónimo. It builds its nest in the forks of trees, generally about 12 feet from the ground. The nest is a loose unfinished-looking structure, consisting of a few dried twigs lined with stalks of grass.

✓ 19. CENTURUS SANTACRUZII. "*Carpintero*." San Gerónimo, June 2, 1860. Bird and four eggs.

The eggs are pure white, but somewhat stained with spots of foreign matter; they measure, axis 1 in., diam. .75.

These eggs were taken in one of the high trees which are scattered all over the plain of San Gerónimo. They were quite fresh.

✓ 20. POLYBORUS THARUS. "*Quebranta-hueso*." San Gerónimo, April 2, 1860. Two birds and four eggs.

The egg, which is well known in North American collections, has a light-red ground colour, but is spotted and blotched all over with several shades of a darker red. It measures, axis 2·15 in., diam. 1·6 in.

One nest which I took was built on the very crown of a high tree in the plain of San Gerónimo. It was made of small branches twisted together, and had a slight lining of coarse grass. It was shallow, and formed a mass of considerable size. I had some trouble in getting the eggs: the position of the nest and the thick branchless trunk of the tree were difficulties which the Indian whose services I had engaged pronounced insurmountable. All my proposed expedients for facilitating his ascent were knocked on the head by that everlasting "*Quien sabe, Patron?*" and it was only on the following conditions that my dusky friend allowed himself to be tied to one end of a lasso, the other end being thrown over the lowest branch and hauled through the air until he got into fair climbing. I was to pay him well if he went up and came down again safely; but

if on the other hand he made his descent head foremost and died from the effects of the fall, I was to marry his widow and be a kind father to his children. Thus promising, in the blindest compliance, all obstacles were at once removed.

21. **URUBITINGA ANTHRACINA.** "Gavilan." San Gerónimo, April 29, 1860. Bird and one egg.

The egg is white, with an inner surface of sea-green, as in all eggs of the *Buteonidæ*. The outer surface is beautifully marked with blotches of lilac and spots of three shades of red. It measures, axis 2·15 in., diam. 1·7 in.

Taken, at San Gerónimo, from a high tree at the foot of the mountain-range which bounds the plain.

✓ 22. **ASTURINA NITIDA.** "Gavilan." San Gerónimo, April 3, 1860. Three birds and three eggs.

These eggs are all white, without natural colouring. The inner coating of the shell is sea-green. They strengthen the close connexion which exists between *Asturina* and *Astur*.

The nest of this Hawk is usually found in the high trees which are scattered over the plain, and not unfrequently within a few yards of the Indian ranchos. Two eggs seem to be the complement laid by one bird.

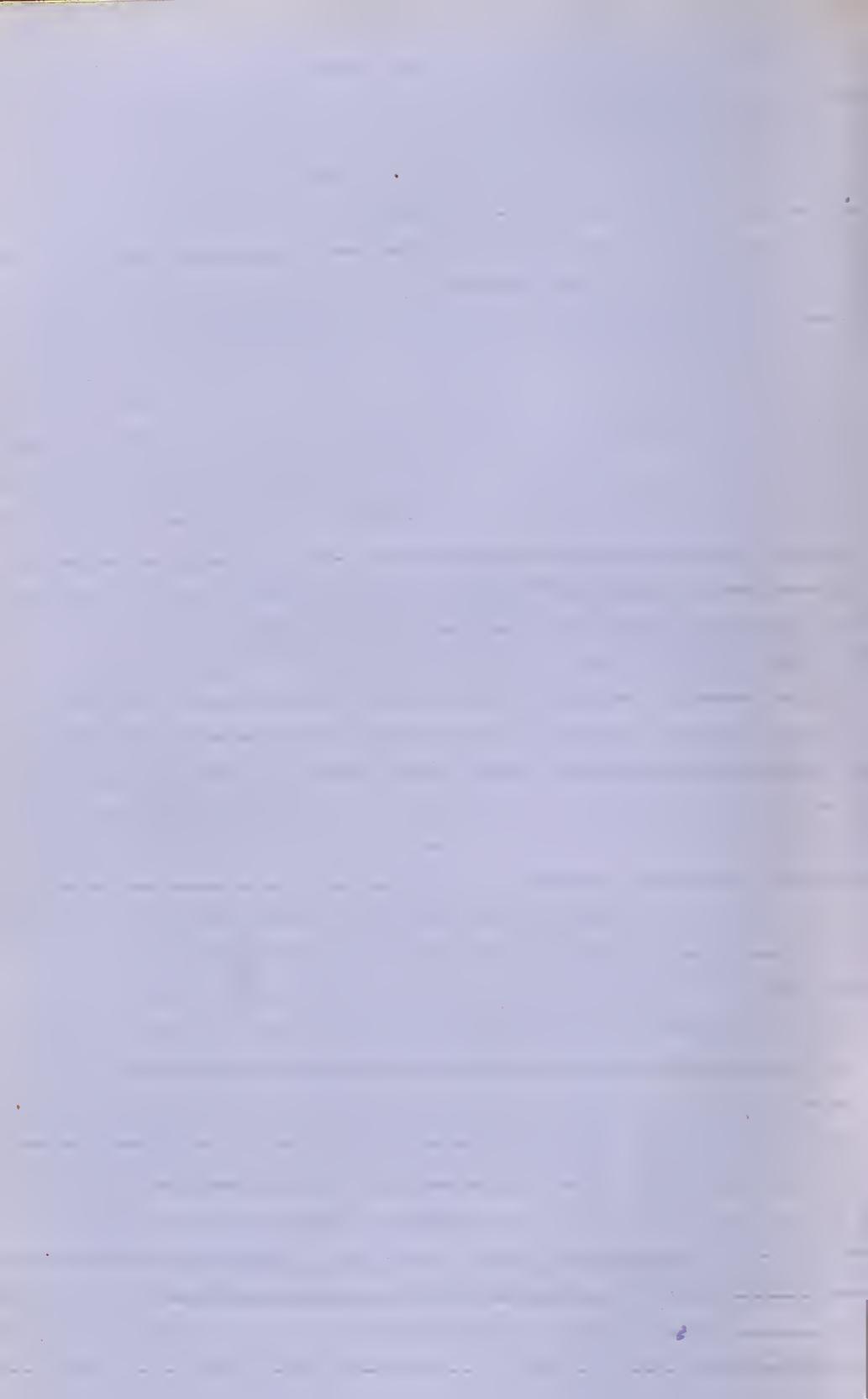
23. **ŒDICNEMUS BISTRIATUS***. "Alcaraban." Plain of San Gerónimo, May 5, 1860. Bird and one egg.

The egg is precisely like that of *Œ. crepitans*, being of a pale ochreous brown spotted all over with several shades of dark brown. It measures, axis 2·3 in., diam. 1·45 in.

I have only been able to obtain one egg of this bird. Their nesting-time must have been long past, judging from the size of the young birds which may be seen in the plain. The egg was stale, but the old birds still frequented the spot where it was found. The egg was deposited on the bare ground, the place chosen being slightly hollowed out, and at the foot of a straggling shrub which afforded a slight shade.

* This *Œdicnemus* proves to be *Œ. bistriatus* (Wagl.); *Œ. vocifer*, L'Herm. Mag. de Zool. 1837, pl. 84.—ED.

J. 22 = α. plagata, Schl.



EXPLANATION OF PLATE II.

- Fig. 1. Egg of *Pharomacrus paradiseus* (p. 66).
 Fig. 2. Egg of *Mimus gracilis* (p. 60).
 Fig. 3. Egg of *Polioptila albiloris* (p. 61).
 Fig. 4. Egg of *Pachyrhamphus aglaiae* (p. 64).
 Fig. 5. Egg of *Icterus mentalis* (p. 62).

VI.—On new or little-known Birds of North-Eastern Africa.

By Hofrat THEODOR VON HEUGLIN. (Part II.)

[Continued from vol. ii. p. 414.]

(Plate IV.)

III. *TINNUNCULUS ALOPEX*, Heuglin. (Plate IV.) (*Falco alopec*, Heugl. Uebers. der Vögel N.O. Afr. no. 51.)

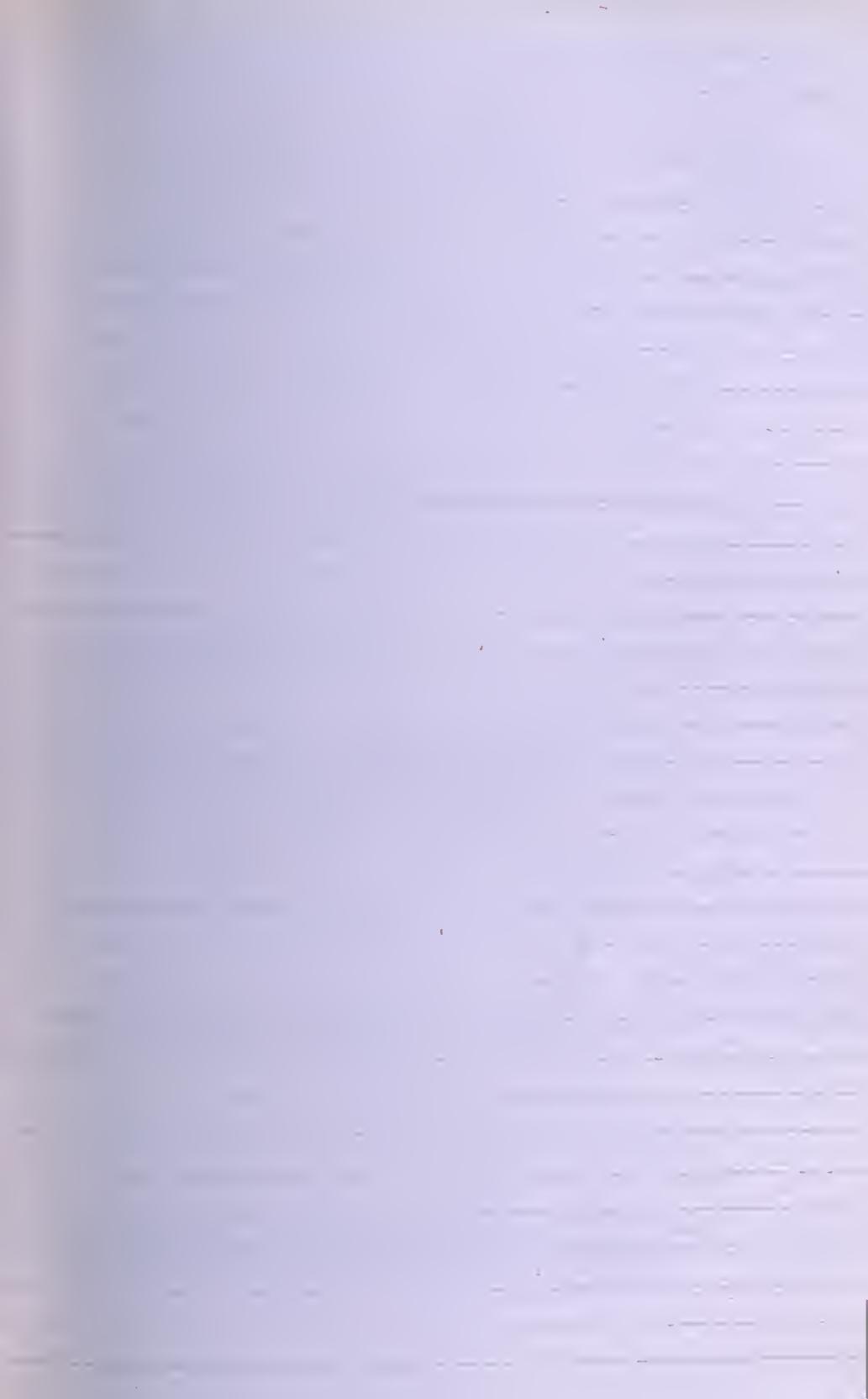
T. ferrugineus, subalaribus paulo pallidioribus, totus nigro striatus: caudæ fasciis xviii–xx æqualibus, transversis, nigricantibus: remigibus fuseo-nigris rufescente variegatis et basin versus interne albis: long. tota (fœm. adultæ) 1·1, alæ 10·6, caudæ 7·0, tarsi 1·9 poll. et lin. Gall.

Hab. In prov. Galabat et locis viciniis.

The general colour of this bird is fox-red, with well-defined blackish spots along the shafts of the feathers. The tail is somewhat darker superiorly, with from eighteen to twenty narrow inconspicuous cross-bands on the shafts of the rectrices. The last of these cross-bands is not conspicuously broader and better defined than the next to it, and there is no lighter edge at the extremity of the tail. The lower coverts of the wings are scarcely lighter than the body, and each feather has a dark spot on the shaft; the inner barbs of the primaries and secondaries are whitish at the roots. The soft parts are greenish yellow; the bill and claws are bluish, the base of the lower bill yellowish, the iris brown.

I discovered this bird, which is easily distinguished from all the other species of *Tinnunculus*, during my sporting excursions into the countries on the Upper Nile. With regard to its proportions, it is intermediate between *F. tinnunculus* and *F. rupicoloides*, but is more slender and has the wings longer than either of them.

The bill is longer and not so strong : the toes and tarsi are somewhat longer ; the latter are shielded upwards to half their height. The species is to be recognized at a distance by its red colour, by the ferruginous lower coverts of the wings, and by the absence of grey on the head and of any broad band on the tail. As far as I know, it is confined to very narrow limits, as I have only found it on the western frontier of the provinces of Wóchni, Galabat, and Goara, and in the prairies of Eastern Sennaar, near Atbara, where it inhabits steep, isolated, volcanic, rocky mountains, sometimes in company with *F. tinnunculus*. It appears to nest in clefts of the rocks in preference to high trees, and hunts for its prey, which consists chiefly of grasshoppers, *Mantides*, and *Truchsalides*, in the morning and evening. Like *F. erythropus* and *F. æsalon*, it devours its prey (holding it in its claws) as it flies, after having previously picked off the legs. I have never found birds or mammals in its stomach, but sometimes large beetles (*Copris* and *Ateuchus*). Whenever the prairie takes fire at the time of the drought, this Kestrel hurries to the spot, often from a distance of several miles, and there joins the great flocks of other insectivorous birds which assemble to hunt after orthopterous and lepidopterous insects, snakes, and other animals that are attempting to escape from the flames. It is difficult to describe the impression made by so strange a spectacle. A sea of flame, fluctuating and roaring like thunder, spreads rapidly as lightning through the dry and high grass, and is overshadowed by a black smoke, which eclipses the daylight and reflects the shooting flashes of fire. Amid this uproar of the elements, the Bee-eater (*Merops nubicus*, Gm.), the Parasitic Kite (*Milvus parasiticus*), the different species of *Circus* and *Tinnunculus* are frantically chasing and pursuing their prey, sometimes plunging into the midst of the smoke, and for the moment disappearing in it. It often happens that one of them singes its wings or tail. This infernal scene is followed by a flock of Storks (*Sphenorhynchus abdimii*), which, melancholy and grave, stride over the burnt and still glowing prairie, seizing the half-roasted grasshoppers with the never-missing thrust of their bills, or robbing of their prey the unfortunate Plovers (*Chettusiae*) which happen to come into too close proximity.





of the Sydney Museum. The bill, legs, and feet in the living specimen were of a reddish orange colour; in the stuffed specimen, in its recent state, they were of a bright scarlet colour, evidently varying from age or other causes. The irides are brown. The bird appears to be very hardy, and, as I have been informed, is not rare in its native country. Should it prove to be an acquisition, no doubt specimens could be procured and sent to the Zoological Gardens in the Regent's Park. It feeds upon insects, mice, birds, and raw meat, which it usually devours entire; it is very ravenous for food, and often evinces some degree of pugnacity when meddled with. It runs with great rapidity, compressing the body and elongating the head and neck in a manner seen to obtain among the Rails. In the same compartment in the aviary is a living specimen of the New Zealand Rail, the *Weku* of the natives (*Ocydromus australis*, Sparrm.). The actions of these two birds are similar; and there is also a marked resemblance between them in the structure of the toes. They are both fond of digging in the earth for worms and searching about the grass for insects, snails, &c.; but the New Caledonian bird, when not disturbed, has a more stately walk than the Rails, and in that respect approaches the Herons or Cranes. It appears to me to form a link between the *Gruidæ* or Cranes and the *Rallidæ* or Rails, which, however, will be more easily decided when an opportunity occurs of examining its anatomy, and more especially its osteological structure. No doubt before long we shall be able to procure specimens for this purpose, when I will communicate with you again on the subject*.

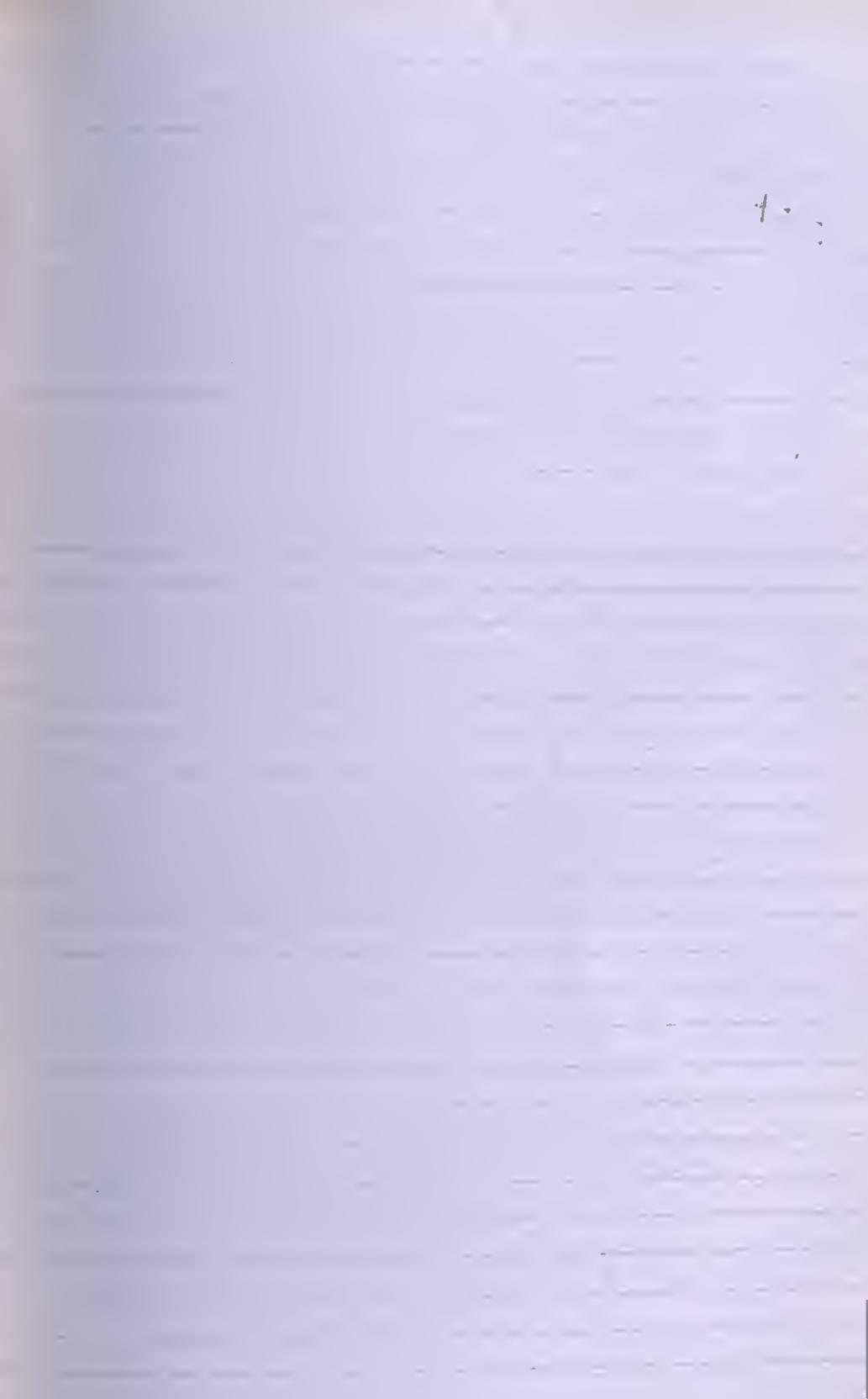
* This bird is the *Rhinochetus jubatus*, Verr. et Des Murs, described and figured in the 'Revue et Magasin de Zoologie' for last year (1860), p. 440, pl. 21, from a single example preserved in the "Exposition des produits des Colonies" at Paris. It has been referred by the describers (MM. J. Verreaux and Des Murs) to the Herons (*Ardeidæ*), but is certainly a strange and very interesting form, probably, as Dr. Bennett has suggested, connecting the Rails with the Herons. As no details have been given concerning its habits, Dr. Bennett's account of them is of great interest, and we sincerely trust that he may be able to carry out his intention of sending living examples to England. At present the specimen in Paris is the only one known, so that skins and skeletons of this bird would be also much valued in this country.—ED.

XIV.—*Quesal-shooting in Vera Paz.*

By OSBERT SALVIN, M.A., F.Z.S.

As the greater part of this account of the mode of collecting Quesals (*Pharomacrus paradiseus*), as pursued by the Coban hunters, was written at the time in the form of a diary, I have thought it best to preserve it in the same shape throughout.

March 1.—Rain all day and every day is what one must expect to encounter on visiting Coban. Such was the weather in November, and now, the month of March brings no signs of the dry season, when in Guatemala people have almost forgotten what rain is. When travelling from place to place, the fates have in general been propitious, and on coming here they did not desert me. Two fine days enabled me to reach Coban from San Gerónimo with a dry skin, but the next day the usual driving, misty rain greeted us on rising, and morning after morning brings no change for the better. Luckily, I have found plenty of indoors work in arranging and labelling the collections made during my absence. Moreover, Coban has this advantage. A mere hint at what branch of natural history one has a leaning towards is sufficient to bring in specimens in an almost unbroken stream. Boy follows boy, till one hardly knows which way to turn to stow away the spoils in the shape of birds, snakes, lizards, toads, frogs, &c., and no small amount of time is occupied in paying these young rascals (for they all try to cheat) for their captures. Like everything else, my work appears to have an end. The birds are finished and packed, novelties are no longer brought in. The period of my stay being limited, idleness cannot be long endured, and I am determined, rain or no rain, to be off to the mountain-forests in search of Quesals, to see and shoot which has been a day-dream for me ever since I set foot in Central America. Having secured the services of Cipriano Prado, the most successful Quesal-hunter in Coban, and at the same time a bird-collector of no mean ability, and also of Filipe Sierra, another hunter of Coban, we are beginning to prepare for the journey. It is necessary to take provisions, and we are accordingly laying in a stock of salt meat, 'pixtones' (round maize eakes $\frac{1}{4}$ of an inch thick), 'tamalis' (maize puddings), and 'topopoxti'





(thin maize eakes not unlike oat-eake), all of which have to be started the day previous to our own departure, on the backs of five Indians. Our proposed hunting-ground is distant three days' journey from Coban, two of which lie along a road passable for mules. We therefore reckon on catching up our cargoes on the second day, and then proceeding on together. The road we intend to take is that between Coban and Cajabon, which we follow as far as San Agustin Lanquin, and leaving our animals there to be sent back to Coban, make for the ridge of mountains to the northward, and follow them in a westerly direction towards Coban.

March 6.—The road over the Mieo mountain near Yzabal, so graphically described by Stevens, is a trifle to that which we have just passed,—slippery clay, mud and stones combining to make progress difficult, and falling easy. In fact, it was just about as bad a road as one could pass mounted. Cipriano in descending a hill was stretched on his back. Though he complains a good deal of himself, his gun, I think, will prove to be the worst sufferer, as an old crack in the stock has opened and we have been obliged to tie it together with string, after the fashion of Gordon Cumming's rifle. My mule was down on her knees several times, but we both managed to rise together. Filipe fared no better. To-night we are to sleep under a rancho or 'ermita,' that is to say, a roof upon poles sheltering three crosses. Few of these roadside huts have any walls. Small as our lodging is, it affords shelter to some twenty-five souls; for besides ourselves, and an Indian to carry the hammocks and a change of clothes, some twenty Indians are congregated here for the night, some bound for Coban, some in the opposite direction, but all carrying their cargoes of onions, maize, &c., for sale or exchange. In my hammock I swing clear of everything except the smoke from the wood fire, the least objectionable of evils attendant upon a night spent in an Indian rancho. My blankets I had sewn into bags before leaving Coban, so that I am well provided against cold, which in the mountains is sometimes severe. This plan of sleeping in a bag is well adapted for a hammock, where covering below as well as above is necessary, as this desirable end is not so easily or so effectually arrived at by means of the ordinary blanket.

March 7.—Soon after starting I shot a fine specimen of *Accipiter erythrocnemis*, and shortly afterwards one out of a pair of *Ictinia plumbea*. This last species seems to be particularly partial to patches of pine trees, which grow at intervals all through the Alta *Vera Paz*. The road was no improvement upon that of yesterday, and though we had not far to go, it was late in the afternoon when we reached Lanquin. Finding that Fray Domingo Lopez, the Padre Cura of Cajabon, was in the village, we went to the convent and there put up.

March 8.—As it is necessary to take a 'practico' or guide with us to the mountains, I had purposed spending a day in Lanquin to find one, and also two Indians, as two of those hired at Coban have to return with the mules and saddles. A guide is absolutely necessary, as my companions have never explored these districts; and a knowledge of those parts most frequented by the Quesals, as well as of the springs of water, is indispensable to the success of the expedition. Moreover we might lose ourselves in these forests for days, and the consequences would be serious. Most places have their 'lion,' and Lanquin is not an exception to the rule; the 'lion' in this case being a cave, out of which the river of Lanquin emerges. This stream helps to swell the river of Cajabon, and finally flows into the Polochic. The interior of the cave is said to be beautifully festooned with stalactites. It becoming known that we have resolved on an inspection of it, a number of Indians, boys and men, follow us from the village, and these, with two I have hired to carry pine for torches, swell our party to some twenty individuals. Each takes his bundle of chips, and all having fired their torches, we go in. These caves are always curious and interesting to see; but the half-naked Indians, each with his lighted torch, scrambling about the rocks in all directions and shouting to the echoes, enhance the strangeness of the scene. After winding in and out and climbing up and down among slippery stones, now stooping to pass a narrow opening, now gazing upwards into veant blackness or downwards into similar obscurity, we reach the point where the river flows at the bottom of the cavern, not in an unbroken stream, but among large masses of rock, over which we scramble. Having satisfied curiosity, and the torches beginning to

= A. chionogaster, Kp.



dwindle, I sound a retreat, as, had we been left in darkness, no amount of groping would bring us out. This cave would appear to be of great length; the river that flows from it forms no mean stream. On leaving the cave I begin to collect ferns, many species of which are growing about the rocks and surrounding trees*. Whilst thus engaged, a shower of fruit from a neighbouring tree calls my attention, and looking up, I spy a 'Mico leon' (*Cercoleptes caudivolvulus*) regaling himself on a well-loaded bough. I immediately send a boy back for my gun, which I have left at the mouth of the cave, intending to return. Mico leon however makes off, but Cipriano and Filipe are soon on his track. The latter fires a shot, and I another, when the animal falls into the water and swims to the other side. Not being able to climb the bank, two Indians strip off their only garment, swim the river, despatch Mico leon, and bring him over between them. These Indians swim well and rapidly, striking out first with one arm and then the other, throwing each out of the water at every stroke.

March 9.—A downpour of rain, misty, drizzling, continuous. However, Cipriano and I pay a visit to the cave, but the forest being too wet to shoot, and rain falling, I collect ferns and land-shells under the shelter of the overhanging rock. On returning to the convent I am for the rest of the day beset with Indians, men and boys, women and girls, bringing lizards, snakes, &c., showing the same excellent collecting qualities as the Coban Indians.

March 10.—Still raining in the same incessant way,—not a thunderstorm and clear sky afterwards, as during the rainy season in the neighbourhood of Guatemala. At Coban and the Alta Vera Paz, it seems to rain at any hour and at any season.

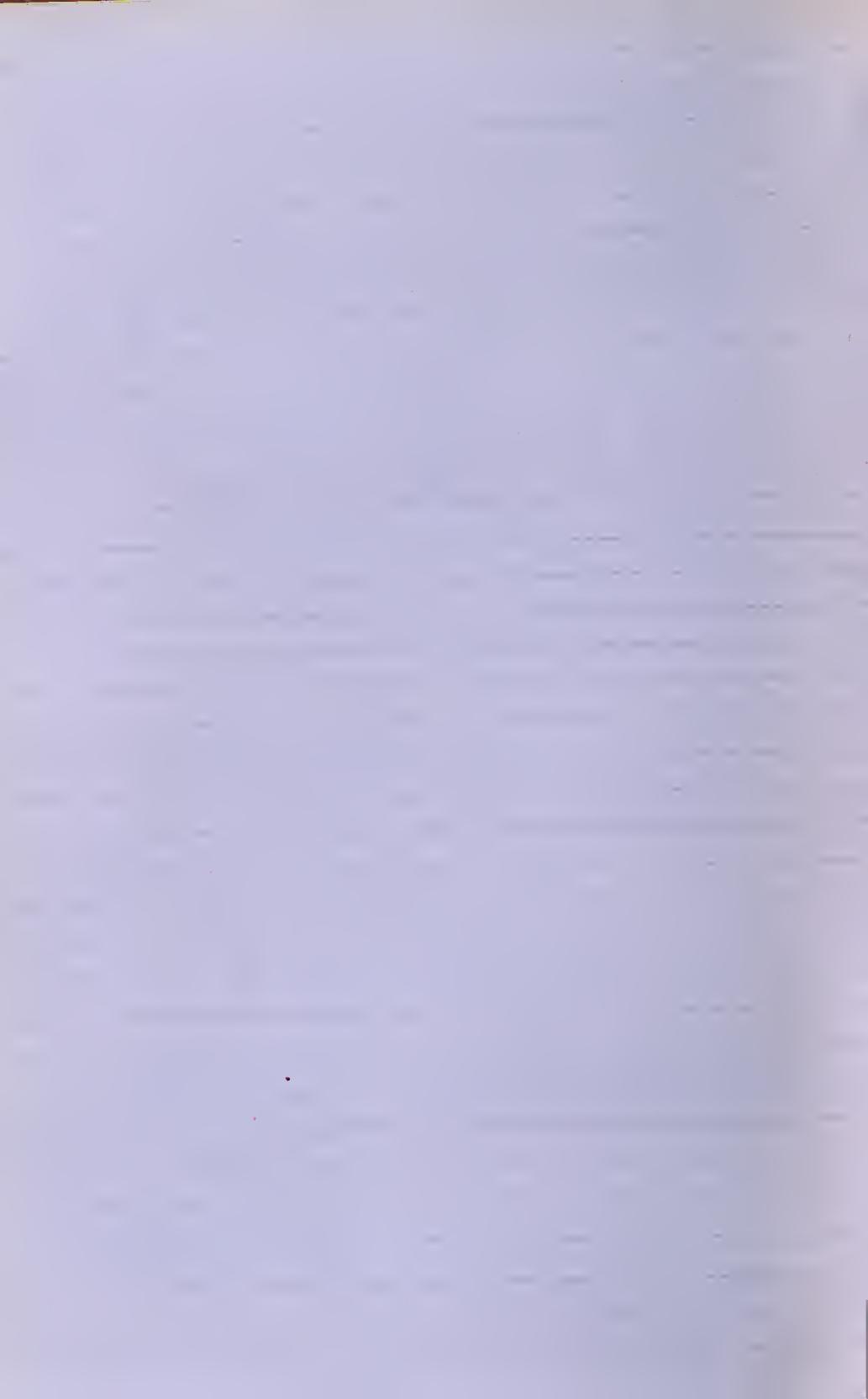
March 11.—Still in Lanquin, but the weather decidedly improving. During the afternoon we go out to shoot. Observing on a pine-tree about a dozen nests of *Ocyalus wagleri*, with which the old birds are busy, I send for an axe and have the tree cut down, but find neither eggs nor young in the nests. The birds

* The collection I made during this expedition, as well as all that I obtained in other places, I have submitted to Sir W. Hooker, who has most kindly named the whole for me. Amongst the species are several novelties.

were only preparing to breed. Besides this colony I see little of interest—a few Toucans (*Ramphastos carinatus*) and other common birds.

March 12.—Off to the mountains at last, with a fine day and a fair prospect of success. The road after crossing the river strikes off to the northward—a mountain track winding among the hills. Soon after entering the forest a river crosses the path—a foaming torrent—a fall into which gives no hope of escape. A felled tree, one of the largest of the forest, forms the bridge, over which, slippery with moss and foam, we have to pass. For ourselves it is nothing; but I must say I tremble for the Indians, each of whom carries his 75 lbs. of cargo. In the worst and most slippery part the foot-hold is somewhat improved by the tree being notched with a 'machete,' but still it is as dangerous a pass as I ever crossed. After half an hour's delay we reach the other bank. One 'mozo' only turned faint-hearted, and another carried his pack across. From the river the path becomes very precipitous, and we continue to climb till we reach the foot of a rock, where we find a deserted rancho and take possession. A fire having been made to heat the pixtones, we dine, and afterwards start for the forest close by to look for Quesals. On entering, the path takes the unpleasant form of a succession of felled trees, which are slippery from recent rains, and render progress slow. My companions are ahead, and I am just balancing myself along the last trunk, when Filipe comes running back to say that they have heard a Quesal. Of course, being especially anxious to watch, as well as to shoot one of these birds myself, I immediately hurry to the spot. I sit down upon my wide-awake in most approved style close to Cipriano, who is calling the bird, and wait, all eyes and ears, for the result. I have not to wait long. A distant clattering note indicates that the bird is on the wing. He settles—a splendid male—on a bough of a tree not seventy yards from where we are hidden. Cipriano wants to creep up to within shot, but I keep him back, wishing to risk the chance of losing a specimen rather than miss such an opportunity of seeing the bird in its living state and of watching its movements. It sits almost motionless on its perch, the body remaining in the same position, the head only moving slowly





from side to side. The tail does not hang quite perpendicularly, the angle between the true tail and the vertical being perhaps as much as 15 or 20 degrees. The tail is occasionally jerked open and closed again, and now and then slightly raised, causing the long tail-coverts to vibrate gracefully. I have not seen all. A ripe fruit catches the Quesal's eye, and he darts from his perch, hovers for a moment, plucks the berry, and returns to his former position. This is done with a degree of elegance that defies description. The remark has often been made by persons looking at stuffed Humming-birds, "What lovely little things these must look in life, when they are flying about!" But they do not. Place a Humming-bird twenty yards from you, and what do you see of its colours, except in the most favourable position and light? This is not the case with the Quesal. The rich metallic green of the head, back, and tail-coverts reflects its colour in every position, whilst the deep scarlet of the breast and the white of the tail show vividly at a distance, and contrast with the principal colour of the body. The living Quesal strikes the eye by its colour at once. It stands unequalled for splendour among birds of the New World, and is hardly surpassed among those of the Old. Such are my reflections, when a low whistle from Cipriano calls the bird nearer, and a moment afterwards it is in my hand—the first Quesal I have seen and shot.

This same evening we hear the cries of another pair of Quesals, but they refuse to listen to the voice of the charmer. A long

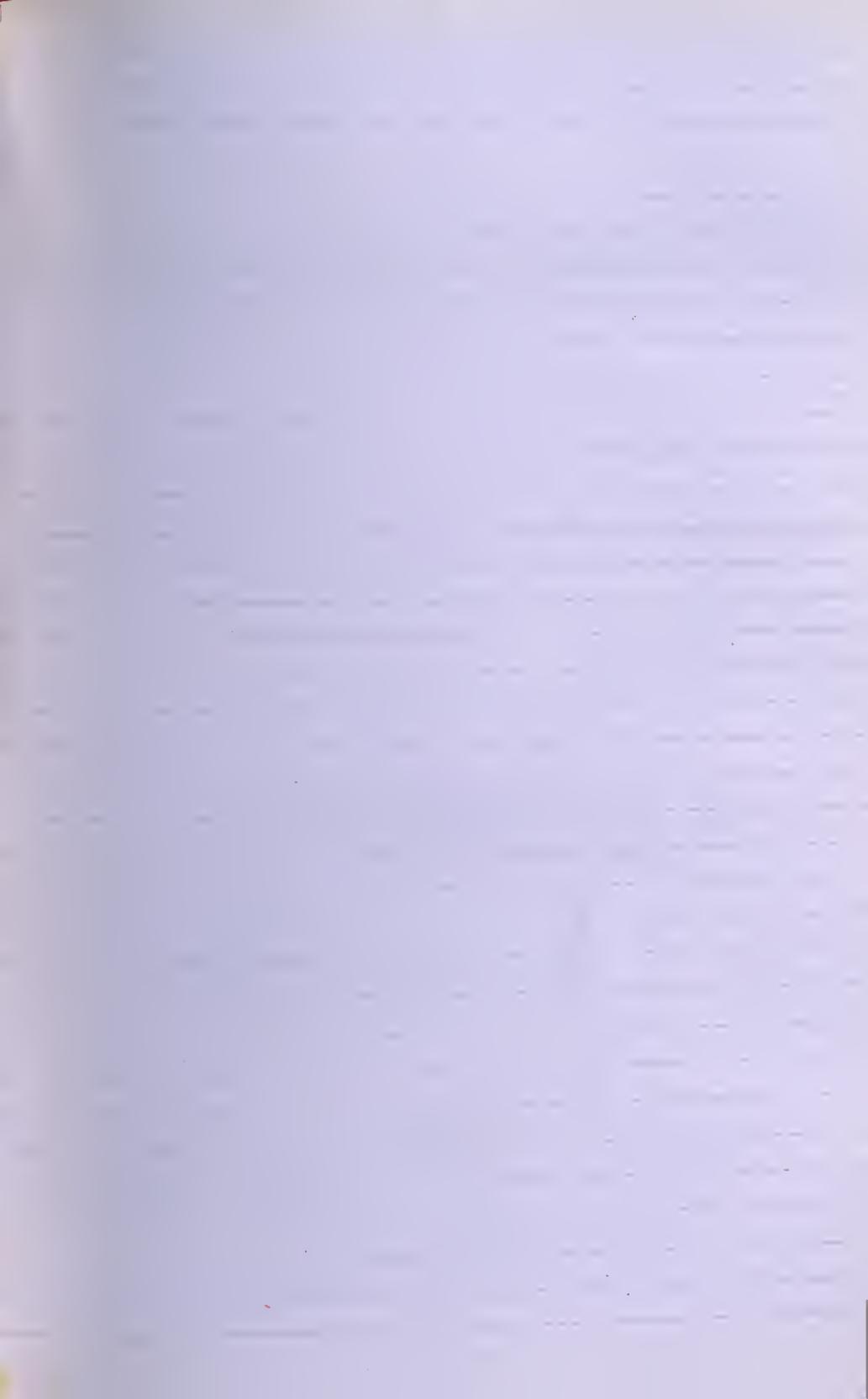
✓ chase after a pair of Pauhil (*Crax globicera*), which results in an ineffectual shot, now brings the day to a close, and, the path being neither very clear nor good, I think it best to return.

✓ On my way back I shoot a specimen of *Sclerurus mexicanus*, a bird I have never seen before. Its habits much resemble those of a Wren. I never saw either this individual, or others met with subsequently, climbing like a *Dendrocolaptes*, but usually hopping about the brushwood, and frequently on the ground, scratching among the dead leaves. The cry of the *Sclerurus* is shrill and may be heard at some distance.

There is one bird in these forests which I became acquainted with, but was unable to procure. Nor could I obtain a more

satisfactory account of its appearance than that it was coffee-coloured, and about the size of a small Thrush. Its song, which I heard frequently, is most peculiar, and comprises some of the highest notes I ever heard from any bird. It is clear and melodious, without having any great variation. The name commonly applied to it is the '*ruiseñor*,' or Nightingale. I think it probable that the bird may be one of the numerous Wrens found in the country.

The cries of the Quesal are various. They consist principally of a low double note, "*whe-oo, whe-oo,*" which the bird repeats, whistling it softly at first, and then gradually swelling it into a loud but not unmelodious cry. This is often succeeded by a long note, which begins low, and after swelling dies away as it began. Both these notes can be easily imitated by the human voice. The bird's other cries are harsh and discordant. They are best imitated by doubling a pliant leaf over the first fingers, which must be held about two inches apart. The two edges of the leaf being then placed in the mouth and the breath drawn in, the required sound is produced. Cipriano was an adept at imitating these cries, but I failed in producing them for want of practice. When searching for Quesals the hunter whistles as he walks along, here and there sitting down and repeating the other notes. As soon as he hears a bird answering at a distance he stops, and imitates the bird's cries until it has approached near enough to enable him either to shoot it from where he stands, or to creep up to within shot. The female generally flies up first and perches on a tree near the hunter, who takes no notice of her, but continues calling till the male, who usually quickly follows the female, appears. Should the male not show himself, the hunter will sometimes shoot the female. Thus it is that so large a proportion of males are shot. The flight of the Quesal is rapid and straight; the long tail-feathers, which never seem to be in his way, stream after him. The bird is never found except in forests composed of the highest trees, the lower branches of which (*i. e.* those at about two-thirds of the height of the tree from the ground) seem to be its favourite resort. Its food consists principally of fruit, but occasionally a caterpillar may be found in its stomach. The





colouring of the soft parts is as follows:—Iris very dark hazel. Eyelid black. Bill yellow, with an olive tinge at the base, extending over the nostril along one-third of the upper and two-thirds of the under mandible. Legs and toes olive; soles of the feet more yellow. Claws horny olive.

The following morning, March 13, we make an early start for the same forests, intending to take a wide circuit and return to our camp under the rock the same evening. Five Quesals and a Pava (*Penelope purpurascens*) are the result of our day's work.

March 14.—Having accomplished the great object of my expedition, viz. to see a Quesal myself, I find my time too valuable to bestow more attention on them, when so many other objects of interest lie within my reach. I accordingly leave Cipriano and Filipe to hunt up birds, whilst I confine my attention to the ferns, shells, &c. I have never visited these forests of Vera Paz before, and my impression is that they are almost the best worth seeing of anything in Guatemala. The forests of the coasts are rich in all the beauties which have been the theme of so many travellers, but they have their disadvantages. The excessive heat is always a drawback; and if garrapatas abound, one's enjoyment is gone. In these mountain-forests it is otherwise; no garrapatas, no mosquitos, and a climate that in the dry season might challenge any in the world. Most parts are '*montaña limpia*' (forest free from brushwood), and one may ramble where one pleases, without being stopped by dense thickets. What strikes the eye most is the number of ferns, not only of plants, but species. Every tree is clasped and every stone clothed with them. Besides, there are many arborescent species, and others of terrestrial habit. Palms of low growth and various form also are a marked characteristic of the forest. Few sounds are heard; the low murmur of insects contrasts strangely with the din of the coast forests. Birds are not often met with. An occasional Creeper (*Dendrocolaptes*) may be seen or its cry heard; the peculiar thrilling notes of the Ruiseñor, the distant call of a Tropicbird, the cooing of a Pigeon, the melancholy wailing of the Pava (*Penelope purpurascens*), or the noisier call of the Colola (*Tinamus*), include nearly all the sounds one

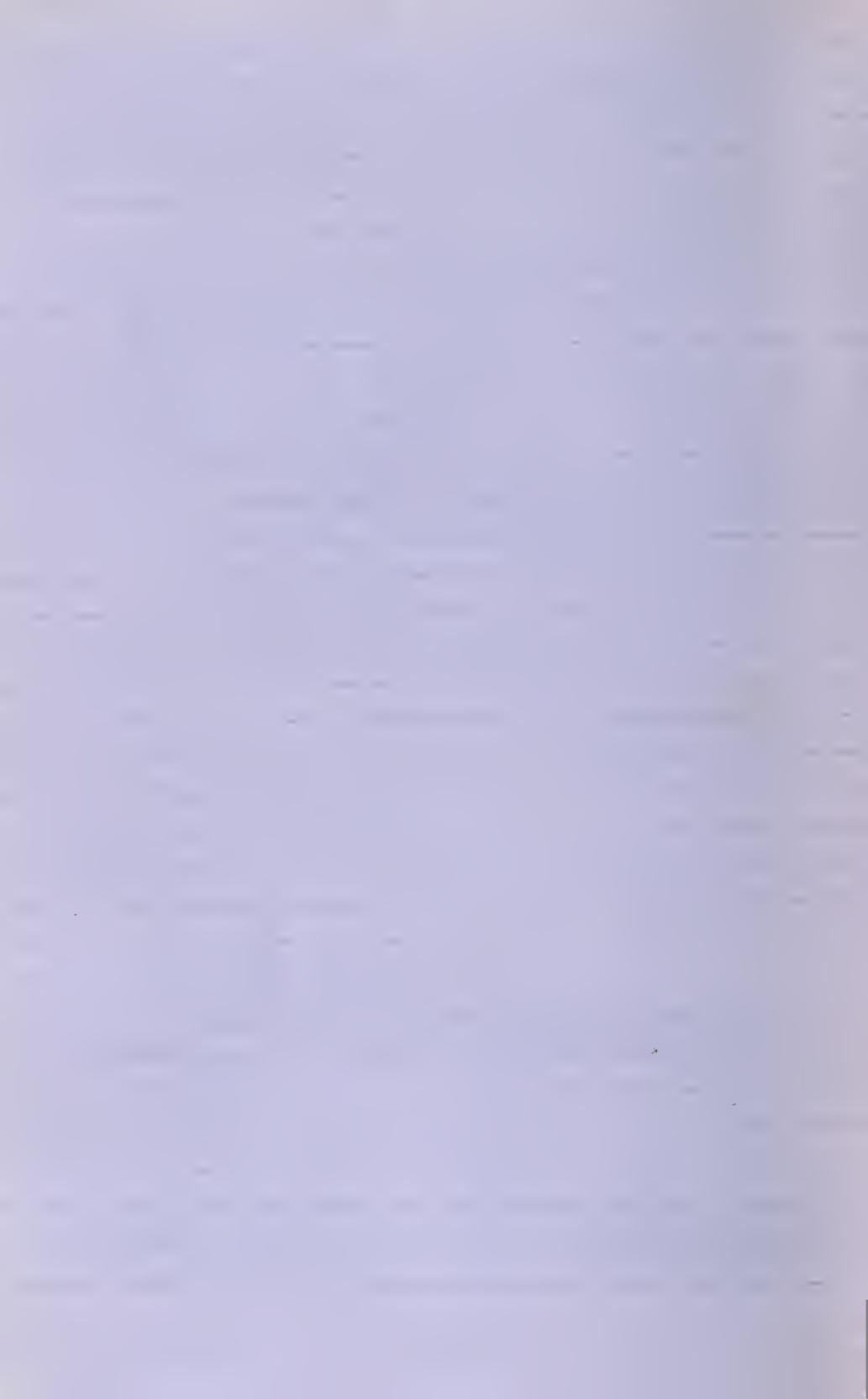
hears from the feathered tribes. Should, however, a troop of Monos (*Mycetes palliatus?*) be within hearing, every echo of the forest is awakened with their discordant bellowings, which it is no exaggeration to say may be heard at the distance of a league.

March 15.—After some delay we start westward again, as, from what we can gather from the Indians, it seems evident that we have reached the limits of the Quesals in this direction, and the country between us and Coban seems to offer the best prospect of success. The only mishap that overtakes us is the leakage of my large bottle full of reptiles. On examination the cork proves imperfect—a defect easily remedied, had not the Indian who carried it got it into his head that the rum having snakes in it would produce festering sores wherever it touched him! After a great deal of arguing on the subject, I induce one of the guides to take charge of the maligned bottle. That night we reach a large ‘ermita,’ where we sleep, and secure another guide for the next day to conduct us to the district of Rashchay, said to abound with Quesals.

✓ March 16.—On going out I perceive a pair of *Ictinia plumbea* preparing to build in a pine-tree close to the rancho we have been sleeping in. As there is no chance of procuring the eggs, I secure the birds for my collection. On entering the forest, a fine male *Trogon massena* falls to Cipriano’s gun. This, three Quesals, and a few other birds, form the day’s bag. A rancho half in ruins in a small clearing in the forest gives us shelter to-night. We prop up one corner, which has a deplorable tendency to droop for want of its corner post, and patch up the most open places in the roof with the extra stock of ‘suyacales’ (mats made of reeds to cover an Indian’s pack) we have brought from Lanquin. Filipe’s hammock gives way on the first trial and lets him down with a run; mine seems inclined to remain where it is.

✓ March 17.—A heavy rain tests our last night’s repairs, and it requires no small amount of managing to place ourselves and our baggage out of the drops that fall in many places from the roof. The day clears up at 10 o’clock, and I send Cipriano and Filipe in different directions with a guide apiece to shoot Quesals, whilst I and the third guide search for other things.





- ✓ My bag to-day consists of a Swift (*Chetura vauxi*), two specimens of a beautiful Tanager (*Pyranga erythromelæna*), and a large addition to my collection of ferns. Cipriano and Filipe bring in seven Quesals between them, and one of the guides a single specimen of *Vireolanius pulchellus*.

March 18.—As my time is limited, I have decided to remain in this spot, which seems likely to be productive, as long as I can, and then return straight to Coban. All to-day Cipriano and Filipe have been out; I have been chiefly occupied in skinning the specimens which resulted from yesterday's excursion. I have taken no small amount of pains to secure good examples for my own collection, as I wish my Trogan-drawer to look as well as possible. To-day Cipriano and I have had a long chase after some Parrots, one of which we have at last secured*. It cost us many a fruitless shot, as the trees in which we find them are of great height, and a bird at the top of one of them is almost out of gun-shot. We had just secured this bird when a distant noise warned us of approaching heavy rain, and we had just time to reach our camp when a thunderstorm came on—a real tropical storm. It is astonishing to notice the noise rain makes in the forest when striking the leaves of the trees. An approaching storm may be heard many minutes before the rain comes up.

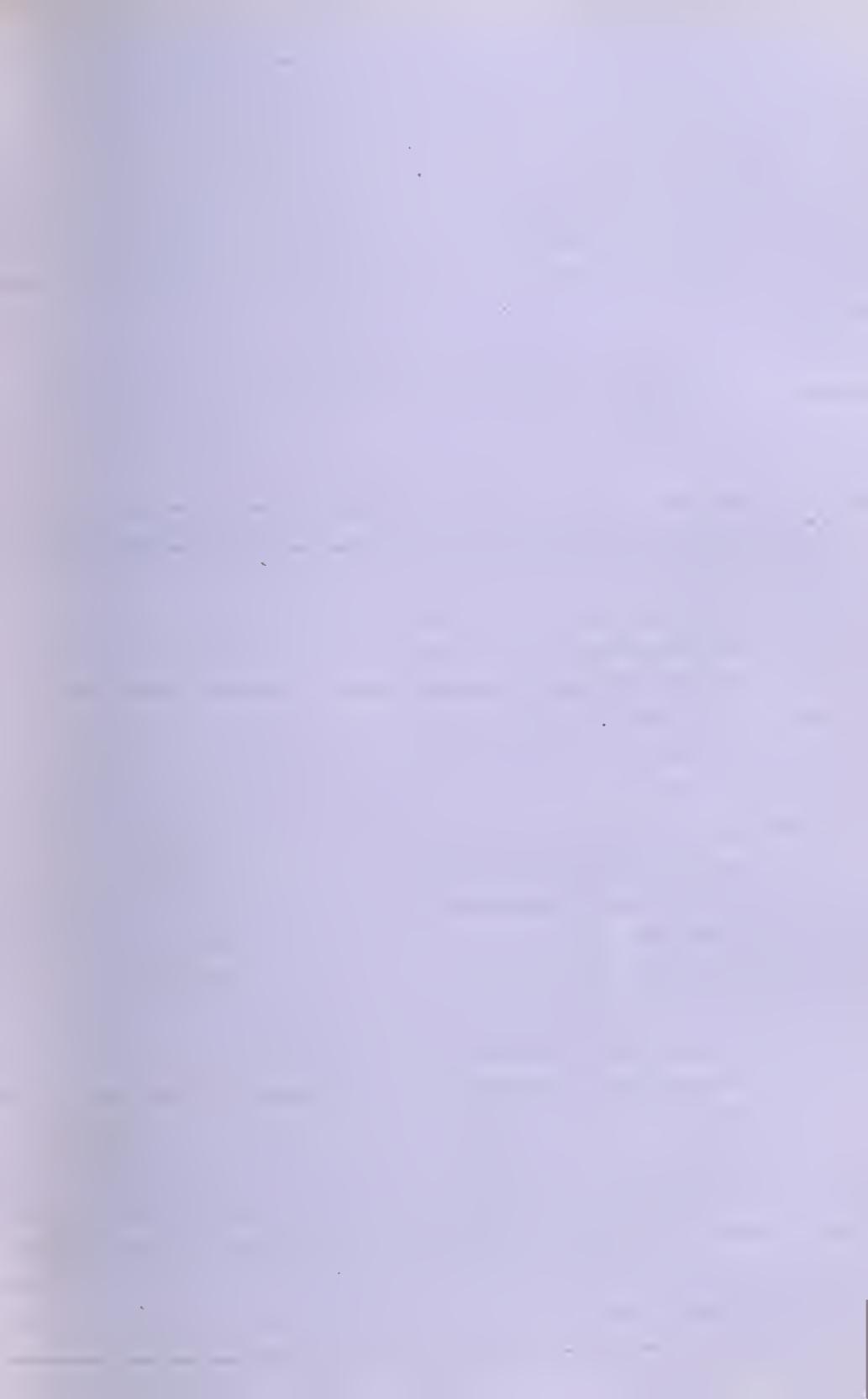
March 19.—All last night rain fell in torrents, accompanied by thunder and lightning. Rills of water we had stepped across yesterday are now small rivers, and the whole night long we could hear the crash of falling trees. My companions were seriously alarmed lest we should be swept away. I did not share their anxiety, as the limits to which watercourses rise are easily traced, and I knew that we were safe. The downfall of our rancho was a danger much more imminent. To-day we have a long journey before us, and I order an early break-up of the camp. On the road we shoot several Quesals, and I add materially to my collection of ferns. The day is far advanced when I find that our guide has missed his way, and knows no

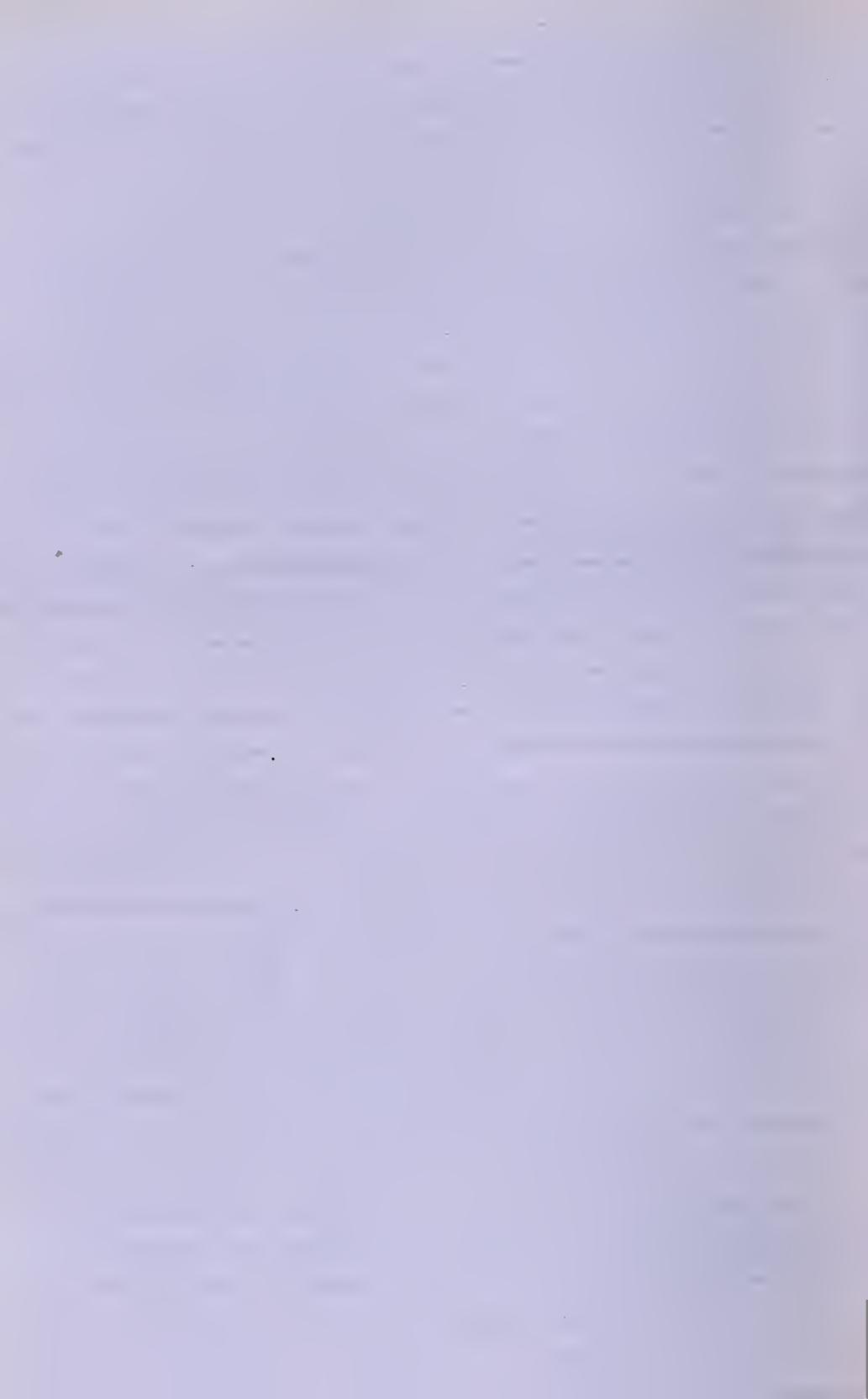
* This bird proved to be an undescribed species. It now stands as *Pionus hæmatotis*, Sel. et Salv., and a drawing of it will be found in the second volume of this Journal, plate 13.

more about the road or where he is than one of us. During the day I had not paid much attention to the course we were taking, except to know that we were going nearly in the right direction. My pocket compass now comes into requisition, and starting on the principle that a path must lead somewhere, we strike the most likely-looking route, which in time brings us to an uninhabited rancho in a clearing of Indian corn. In this we establish ourselves for the night.

March 20.—As no one seems to have a very clear idea of the road, I, compass in hand, undertake the direction of affairs. Three hours' walk brings us into a part of the country known to Cipriano, and we presently strike a road which takes us over a high range of hills which we were skirting all yesterday. While ascending, I observe several Swallow-tailed Kites (*Elaenoides furcatus*) soaring above me. This bird has wonderful powers of flight: no eagle or vulture could sail more easily or gracefully in the air. Like *Ictinia plumbea*, I believe that this species breeds in the patches of pine trees which are found here and there throughout the forest. I gather this belief from common report. A little Indian village, by name Kohak, is our resting-place to-night. Here we are all billeted upon some Indians inhabiting a large long rancho with a family at each end. The inmates seem to have a decided turn for music, and we have not long established ourselves when Cipriano pitches upon a guitar and Filipe on a harp. They are now hard at work, accompanied by an Indian playing on a kind of drum, knocking out Indian tunes as fast as they can remember them. I have made myself comfortable for the night in my hammock, and am endeavouring to fancy myself in the act of being soothed to sleep by the dulcet strains that assail my ears. A long day's work is likely to be more effectual.

March 21.—Nine leagues yet to walk before we reach Coban. I give out that I mean to finish our journey to-day; the rest say no. Mountain fare has left me in capital training, and I feel confident of doing it if I can only get the Indians along. To lighten their loads I hire another Indian, so that they have no excuse for lagging. Four leagues brings us to the Lanquin road, and we eat the last of our 'toppoxti' at a place called





Kakiton. Here I cheer the Indians with some of their favourite drink, 'chicha,' which is neither more nor less than fermented liquor before it is distilled. I then walk on and reach Coban at half-past five o'clock. My companions and the Indians arrive at eight o'clock, and thus bring my last expedition in Guatemala to a conclusion.

XV.—*Notes on the Birds of the Falkland Islands.* By Captain C. C. ABBOTT, late in command of Detachments in the Falkland Islands.

THESE notes are the result of personal observations made during a residence of three years, from February 1858 to October 1860, at Stanley, the seat of government of the Falkland Islands, whilst I was in command of the detachments of troops stationed there. During this period I made frequent excursions into the interior of the island, both north and south, and lost no opportunity of collecting specimens myself, and of obtaining information relating to the birds and other objects of natural history by every means in my power. I also sent home a large number of skins and eggs, which have now found their way into the different Museums of Europe.

1. *CATHARTES AURA* (Linn.)*. (Turkey Buzzard.)

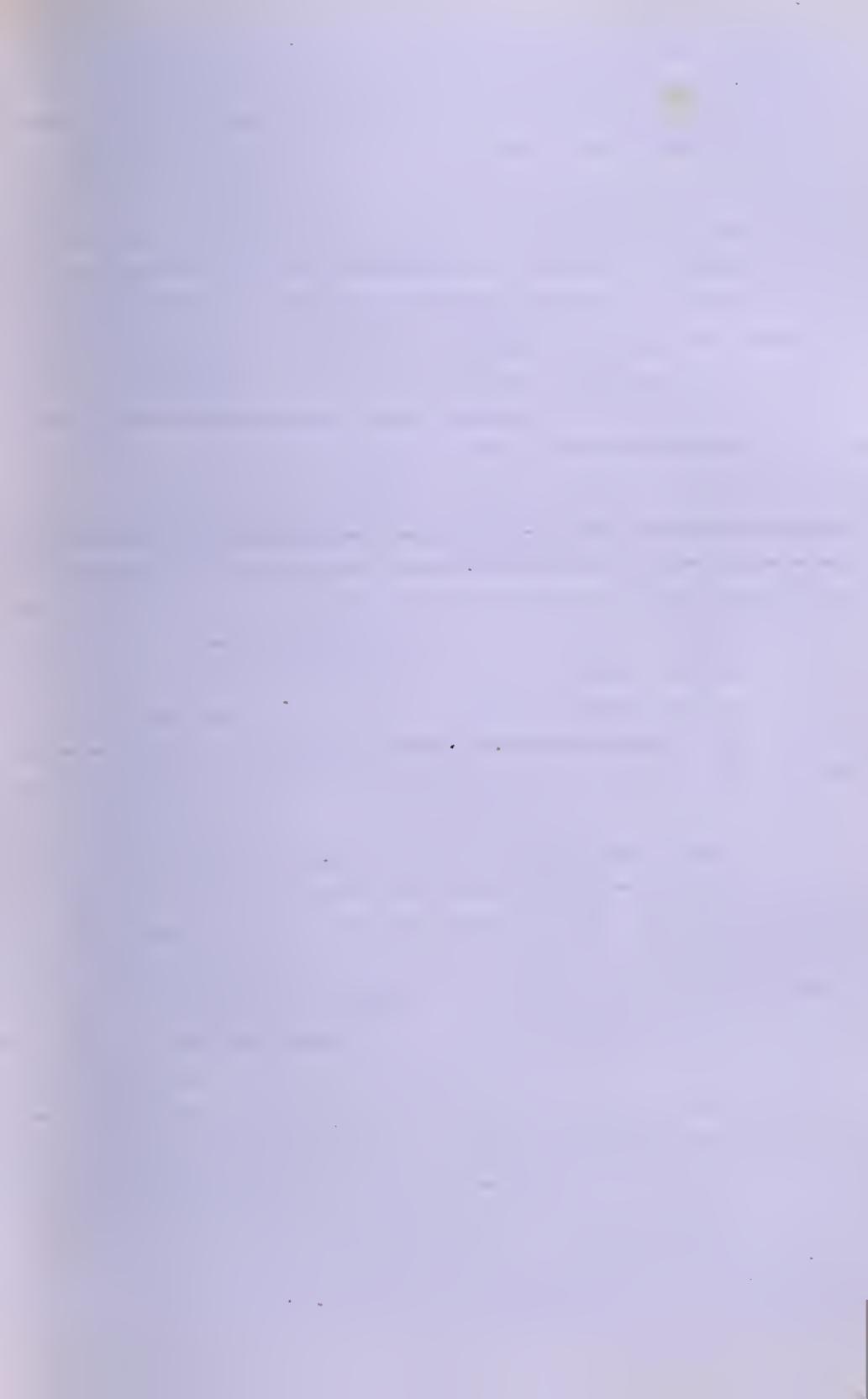
Turkey Buzzards are very common in East Falkland, remaining the whole year round and breeding. They lay their eggs, two in number (but sometimes three), under a high bank amongst bushes, or on the top of a dead balsam log, without constructing any sort of nest. The time of their laying is about the first week in November. I have remarked that the young birds of the first year have the bare space on the head and neck of a bluish colour, as also the feet. In the mature bird these are both pink. These birds go in pairs the whole year round, though of course any dead carcass will bring many of them together.

* The scientific names here given are those adopted by Mr. Slater in his "Catalogue of the Birds of the Falkland Islands" (Proc. Zool. Soc. 1860, p. 382, and 1861, Feb. 12th). The English names, added in parentheses, are those employed by the colonists for the species known to them.

2. *MILVAGO AUSTRALIS* (Gmel.). (Johnny Rook.)

This is one of the commonest birds in East Falkland. One or two of their nests are sure to be found near a Penguin-rookery. During an expedition which I made to the North Camp, in December 1860, I found at least fifteen nests along the cliffs of the north shore. All these had two young ones in them covered with down of a light-yellow colour. The nest is generally composed of the dead fibres of the Tussac-grass, and frequently has some sheep's wool in it. The eggs are laid in the first week in November, and are generally two, sometimes three, in number. In a nest that I once robbed of three eggs, on going to it again about a week later, I was surprised to find two more laid, one of which was a very light-coloured one. Mr. Darwin has well described the bold habits of this bird, though he appears to be in error in supposing that they only breed on the adjoining islets. I once had my cap knocked off by this bird while taking its eggs, and had it not been for a friendly piece of Tussae growing near, I should have fallen into the sea from the perpendicular cliff where the nest was situated. Another curious incident occurred to me with reference to this bird at Hope Place. On going to take the eggs out of a nest situated on a dead Tussae-root, I heard a rustling at my feet, and on looking down I saw a Loggerhead Duck (*Micropterus cinereus*) vacating her nest. This had evidently been formed out of the fallen particles of the previous year's nest of the *Milvago leucurus*. The Duck left five eggs and a young one in her nest, which seemed to me at the time to have been placed in a most singular situation; but I afterwards recollect that the Loggerhead had chosen her position first (laying in September), and could not have known at the time that she was likely to have such dangerous neighbours. The *Milvago*, although bold in some respects, is in others a great eoward, and will never attack any other bird except the latter be wounded. I have seen the Black Oyster-eatcher drive it away from its eggs.

On one occasion I shot one of these birds for a specimen, and, while it was lying on the ground wounded, another came down and would have killed and eaten it before my eyes had I not interfered. The young birds of this species never get their full



rate Australia, are rather above than below the average brillianey of their tropieal allies.

We must remember that the tropieal fauna almost always extends *beyond* the geographicheal tropie, and thus eomprehends the largest part of the earth habitable all the year by birds. Moreover it is one mass, while the teinperate regions are divided ; and most important of all, owing to the perennial presencee of fruits and insects, a far greater number and variety of birds can exist there than in the elder parts of the earth. It follows, therefore, that if the proportion of bright- to obseure-coloured birds is the same everywhere, yet the tropies must produc the largest actual number, and it has yet to be shown that this proportion is greater in the tropies. Such extensive tropical families as the *Trochilidæ*, *Trogonidæ*, *Cotingidæ*, and *Tanagridæ*, consisting almost entirely of gay-coloured birds, will immediately occur to every one ; but on the other side may be set the *Todidæ*, Bp., *Thamnophilidæ*, *Anabatidæ*, *Dendrocopaptidæ*, *Capitonidæ*, and others equally tropical and as remarkable for their generally obseure coloration.

Here the amount of colour would almost seem to be in inverse proportion to the amount of solar light ; for while no island has more clear sky and bright sunshine than Timor, its birds are far less brilliant than those which dwell amid the gloomy forests and ever-cloudy sky of the Molueeas and New Guinea.

On the whole, therefore, I cannot but believe that a careful investigation of the faets will show that there exists no immediate connexion between tropieal heat and light and brillianey of colour in any department of nature ; and I am sure that on no subject does a greater amount of miseoneeption prevail than ou the relative beauty of nature and display of colour in tempe- rate and tropieal regions.

Delli, Timor, April 20th, 1861.

XXXIX.—*A List of Species to be added to the Ornithology of Central America.* By OSBERT SALVIN, M.A., F.Z.S.

Ibis
1861.

THE following list of birds is derived partly from a eollection brought over by Mr. Robert Owen from Vera Paz, partly from

352 Mr. O. Salvin's *List of Species to be added to the*

a revision of my own collections (which has led to the discovery of several species accidentally omitted in former lists), and partly from other authentic sources.

Mr. Owen's collection was formed mainly by Cipriano Prado, who went as far as Chisec on the Rio de la Passion, and Filipe Sierra, who collected at Teleinan and Panzos on the Rio Polochic. The rest were procured by Mr. Owen himself in the vicinity of Coban and San Gerónimo. Amongst the birds collected by Cipriano Prado, not mentioned in this list, occur two specimens of a *Coccothraustes*, marked by him male and female, and which he shot together (so he told Mr. Owen) near Coban. These agree, on comparison, the male with *C. abeillii*, and the female with *C. maculipennis*, Sclater; and I cannot help thinking that these two supposed species are actually the male and female of one, which should be called by Lesson's name, *C. abeillii*. One female, marked so from dissection, shot by myself near Dueñas, and agreeing with Mr. Sclater's type of the supposed male *C. maculipennis*, confirms me in this idea. Another interesting bird is a *Sclerurus* (which I have referred to *S. guatemalensis*, Hartl.), showing that two species of the limited genus *Sclerurus* occur in Guatemala. There is also a female of a species of *Myrmotherula* which I have been unable to determine, no male specimen having been sent. This is the most northern locality for any species of this genus hitherto recorded.

PASSERES.

1. *CYPHORHINUS PHILOMELA*, Salvin, P. Z. S. 1861, p. 201.

Several specimens. I have no doubt that this is the bird I heard in the mountains and described (*Ibis*, 1861, p. 143) as having great powers of song. In the dense forests it is a difficult bird to see, but its notes may very frequently be heard.

2. *CERTHIOLA MEXICANA*, Sclater, P. Z. S. 1856, p. 286.

Apparently very common in Central Vera Paz. I have received many specimens from Chisec and other localities in the same region, all agreeing very closely with one another.

3. *GUIRACA CÆRULEA* (Linn.); Baird, B. Am. p. 499.

Though not of very common occurrence, this species is pretty

1 mountain forests above Lanquin, Cahabon & San Luis
Choctum.

3. Chol, Mar. 1874., Yzabal, Choctum.

4. Choctum.

5. Choctum.

6 Belize, Lake Yasha.

7. = P. compressus, Cab. -

8. = S. olivaceus, Macr..

generally distributed throughout Vera Paz. I met with it myself in the plain of Salamá, and all the collections from the warmer districts to the northward of Coban contained examples. It has been accidentally omitted from the previous lists.

- ✓ 4. EMBERNAGRA CHLORONOTA, Salvin, P.Z.S. 1861, p. 202.
Chisec. Several specimens.
- ✓ 5. CASSIDIX ORYZIVORA (Gm.); Cab. Mus. Hein. p. 194;
Moore, P. Z. S. 1859, p. 57.
Included in Mr. Moore's list of the birds collected by Leyland
in Honduras.
- ✓ 6. CYANOCITTA CRASSIROSTRIS, Bp. Consp. p. 378; Pucheran,
Rev. Zool. 1858, p. 198. *Pica becheyi*, Eyd. et Gerv. Mag. de
Zool. 1836, p. 26, pl. 72, et Voy. Favorite, pl. 20; Moore, P.Z.S.
1859, p. 57.
Guatemala (Morclet), Mus. Paris : Belize, Honduras (Leyland).
- ✓ ✓ 7. PICOLAPTES LINEATICEPS, Lafr. Rev. Zool. 1850, p. 277;
Sclater, P. Z. S. 1860, p. 252.
The specimen mentioned as having been observed on the
Pacific coast (Ibis, 1859, p. 117) belongs properly to this species,
and not to *P. affinis*, as there stated. It is not improbable that
P. lineaticeps is an inhabitant exclusively of the warm, and *P. affinis*
of more elevated regions. All the specimens of these two
species that I have collected lead to this conclusion.
- ✓ 8. DENDROMANES HOMOCHROUS, Sclater, P.Z.S. 1859, p. 382.
One specimen, with others of *D. anabatinus*, occurs in the col-
lection from Chisec. Neither species of this singular form ap-
pears to be common either in Guatemala or Mexico.
- ✓ ✓ 9. SITTASOMUS SYLVIOIDES, Lafr. Rev. Zool. 1849, p. 331, et
1850, p. 590.
Two specimens from Chisec.
- ✓ 10. XENOPS MEXICANUS, Sclater, P. Z. S. 1856, p. 289.
Apparently common throughout the "tierra caliente" of Vera
Paz.
- ✓ 11. FORMICARIUS MONILIGER, Sclater, P. Z. S. 1856, p. 294.
Several specimens collected at Chisec.

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There is also in the collection one skin of *Grallaria guatemalensis*, a bird which I have hitherto only known from specimens procured by Mr. Skinner. *G. guatemalensis* appears to be quite distinct from the Mexican *Grallaria* (which Mr. Selater now calls *G. mexicana*), being considerably smaller in size and having the under parts more rufous.

- ✓ 12. *CONTOPUS BRACHYTARSUS*, Selater, MS. *Empidonax brachytarsus*, Selat. Ibis, 1859, p. 441.

Two specimens of this Tyrant were collected by Mr. Fraser at Escuintla.

- ✓ 13. *APHANTOCHROA ROBERTI*, Salvin, P. Z. S. 1861, p. 203.

This Humming-bird and *Campylopterus cuvieri* of Gould ought, perhaps, to be placed in a separate subgenus, as being distinct from both *Aphantochroa* and *Campylopterus*.

- ✓ 14. *MOMOTUS CASTANEICEPS*, Gould, P. Z. S. 1854, p. 154; Selater, P. Z. S. 1857, p. 254.

Though Coban is given as the locality in which M. Delattre found this Mot-mot, I somewhat doubt its accuracy, as no specimen has ever come into my hands from that place. In the plain of Zacapa and in the adjacent country, the commonest species is one which answers best to *M. castaneiceps*, many specimens of which I have seen, but never obtained. M. Delattre collected in other parts of Guatemala besides Coban, and it is very possible that the true locality of this bird may have been wrongly given.

- ✓ 15. *CHRYSOTIS XANTHOLORA*, G. R. Gray, List of Psittacidae, p. 83.

The specimen in the British Museum is marked "Dyson, Honduras," and I therefore include it in this list. It differs from *C. albifrons*, its nearest ally, in having yellow lores and black ear-coverts. The dark edgings to the feathers of the back are also more strongly shown.

ACCIPITRES.

16. *HYPOTRIORCHIS DEIROLEUCUS* (Temm.). *Falco deiroleucus*, Temm. Pl. Col. 348.

Among some old skins belonging to Mr. Meany, of Guatemala,



J. 19. Scops barbarus, Sel. & Salv.

J. 21 Leptoptila cerviniventris.

22 "Kolol" or "Kolola" of Vera Paz Indians.

I picked out a specimen of this Hobby, the finest, perhaps, of the genus. The skin is of an adult female and in good condition. Mr. Meany had received it from Vera Paz.

✓ 17. ACCIPITER PILEATUS, Max.

This bird having occurred in M. Sallé's collection from South Mexico, might naturally be expected to be found also in Guatemala. I have now two specimens from Vera Paz, both in the immature dress. They were shot by Juan Prado, who has certainly been most fortunate in obtaining rare birds of prey.

✓ 18. ICTINIA MISSISSIPPIENSIS, Wils.; Baird, Rep. p. 37; Cassin, Ibis, 1860, p. 103.

One specimen from Coban occurs in the last collection, but *I. plumbea* is by far the commonest species of *Ictinia* in Vera Paz. The present bird is clearly distinguishable from that species, the differences being rightly pointed out by Mr. Cassin (*l. c.*). I am not aware of any other specimen of this Hawk existing in this country except the one in the British Museum. It appears to be almost as rare in North American collections.

✓ ✓ 19. SCOPS FLAMMEOLA, Licht. in Mus. Berol.; Kaup, Trans. Zool. Soc. 1859, p. 226.

One specimen of this rare Owl was shot by Mr. Owen in the mountain of Santa Barbara, near San Gerónimo. M. Sallé's Mexican collections, I believe, contained but one example, which was placed in the late Prince Charles Bonaparte's private collection.

COLUMBÆ.

✓ ✓ 20. CHLORENAS FLAVIROSTRIS, Wagl. Isis, 1831, p. 410; Sclater, P.Z.S. 1856, p. 309.

Volcan de Fuego. Collected by Mr. Fraser.

✓ ✓ 21. LEPTOPTILA — ?

Several specimens of a third species of this genus, which may possibly be the *Columba erythrothorax* of Temminck. It is certainly distinct from either *L. albifrons* or *L. rufaxilla*.

GALLINÆ.

✓ 22. TINAMUS ROBUSTUS, Sclater, P.Z.S. 1860, p. 253.

I obtained two eggs of this species in Yzabal in 1859. They

are of a greenish blue, like those of *T. major* of Brazil. An egg of *T. meserythrus*, procured by Mr. Owen, is of a reddish chocolate-brown colour. A specimen of that of *T. sallaei*, in the British Museum, is a creamy white. Other eggs of species belonging to this peculiar family in my collection tend to show that even a specific character may very fairly be assumed from the different colours of the eggs, so decidedly are differences shown in the eggs of such *Tinami* as I have been able to determine satisfactorily.

✓ 23. *TINAMUS MESERYTHRUS*, Sclater, P. Z. S. 1859, p. 392.

A considerable series of this species shows a great constancy in its colouring. One specimen—no doubt a young one—has the chestnut-red of the breast much less strongly shown, and there is an indication of barred markings on the sides and wings. The egg is of a reddish chocolate-brown.

✓ ✓ 24. *TINAMUS SALLAEI*, Bp. Compt. Rend. xlii. p. 955; Sclater, P. Z. S. 1859, p. 392.

Chiseec.

✓ 25. *TINAMUS BOUCARDI*, Sclater, P. Z. S. 1859, p. 391.

In addition to these four species of Tinamou, Mr. Owen states that there is another belonging to the smaller section of this family. Of this fifth species I hope shortly to obtain specimens.

GRALLÆ.

✓ 26. *NUMENIUS BOREALIS*, Lath.; Baird, Rep. p. 744.

A single specimen of this well-known North American bird was sent home last autumn by Mr. R. Owen. It was shot at San Gerónimo.

✓ 27. *ŒDICNEMUS BISTRIATUS*, Wagl. *Œ. vocifer*, L'Herm. Mag. de Zool. 1837, pl. 84; Owen, Ibis, 1861, p. 68.

Mr. Owen has given an account of the breeding habits of this bird in this Journal (*antea*, p. 68). I believe it occurs in most of the plains of moderate elevation, such as that of Salamá, and no doubt is the species observed by Mr. Taylor on the plain of Conayagua in Honduras (Ibis, 1860, p. 314). It is a bird easily tamed, and may frequently be seen in the "patios" or courtyards so characteristic of Spanish American houses.

s.24 = T. boucardi; Sel. T. sallaei is from the Pacific side

25 "Bahllook" (of the Cobau Indians)



✓ 28. *NYCTICORAX VIOLACEUS*, Linn.; Baird, Rep. p. 679; Moore, P. Z. S. 1859, p. 63.

Included in Mr. Moore's list of the birds collected by Leyland.

XL.—*On a new African Species of the Genus Zosterops.*

By TH. VON HEUGLIN*.

(Plate XIII.)

THE genus *Zosterops* (a very circumscribed and very distinct one, though not very rich in species) is found over nearly the whole of Africa, in Madagascar, Australia, some parts of Northern Asia, and in the Southern Indian Islands. I discovered a new species in the high mountainous districts of Abyssinia, easily to be distinguished by its very large eyes and eye-rings, and by its breast and upper abdomen being of a pure grey. In my "List of N.E. African Birds," printed in the 'Transactions of the Vienna Academy,' I have enumerated this new species under the name of *Z. euryophtalma*, but now I prefer changing this name into

ZOSTEROPS POLIOGASTRA. (Pl. XIII.)

Supra virescenti-flava; superciliis gutture et subcaudalibus sulphureis; pectore et epigastrio obsolete cinereis; abdomine medio pallidiore; remigibus et rectricibus fuliginosis, extus virescenti-flavo marginatis, illis intus basin versus albidis; subalaribus albis, flexuram alae versus virescente tinetis; rectricibus caudae superioribus fere totis flavis; macula nigra inter oculum et rectum; regione parotica viridi-nigrigante; annulo periophthalmico nitide sericeo-albo; tibiis griseis, flavescente tinetis; rostro nigerrimo; pedibus plumbeis; iride brunnea.

Long. 4" 3"; rostr. a fr. 4"; al. 2" 5"; caud. 1" 9"; tars. 8".

The male is a little more brightly coloured than the female. The first primary is 2" shorter than the second, third, and fourth, which are the longest. This pretty species lives on the highlands of Abyssinia; I found it there in the month of February and March in wooded districts, on *Euphorbiæ* and olive-trees, at an elevation of 10–11,000 feet.

* Translated and edited by Dr. G. Hartlaub.

The well-known African species of *Zosterops* are the following:

a. ZOSTEROPS.

1. Z. CAPENSIS, Sundev.

Olivaceo-viridis, subtus sordide cinereo-albida; gula crisoque flavis; loris nigro-fuscis, linea superiore flavescente; hypochondriis grisecentibus; annulo periophthalmico nitide albo; rostro nigro; iride brunnea.

Long. $4\frac{1}{2}''$; rostr. a fr. $4''$; al. $2'' 3''$; tars. $8\frac{3}{4}''$.

Syn. Sundev. Öfvers. af Kongl. Vetensk. Akad. Förhandl. 1850, p. 102. *Le Tchéric*, Le Vaill. Ois. d'Afr. pl. 132. *Z. Vailantii*, Reichenb. Meropin. p. 89, t. 460. figs. 3281-86; Grill, Zool. Anteckn. p. 38.

Inhabits the most southern portion of Africa. Common about Capc Town (Wahlb.); Victoria, &c. Stationary and solitary in Central, North, and Eastern Abyssinia (Heuglin, Rüppell, &c.).

With Sundevall and Reichenbach, we believe the very nearly allied *Madagascar* species to be distinct. It is a smaller bird, and wants the dark, blackish lores.

2. Z. MADAGASCARIENSIS (L.).

Supra cum alis et cauda olivacea, capitis lateribus olivaceis; annulo periophthalmico nitide albo; mento et gula flavisimis; pectore abdomineque albido-cinerascensibus; subcaudalibus, cruribus et subalaribus flavis; rostro nigricanticornico, basi mandibulae pallida; pedibus brunnescensibus.

Long. $3\frac{1}{2}$ - $3\frac{3}{4}''$; rostr. a fr. $4\frac{1}{2}''$; al. $1'' 11''$; cand. a bas. $14''$; tars. $7''$.

Syn. *Ficedula madagasc. minor*, Briss. Orn. iii. p. 498, pl. 27. fig. 2. *Motacilla madagasc.*, L. *Sylvia annulosa*, Sw. Zool. Illustr. pl. 164. *Z. flavigula*, Sw. Menag. p. 294; Reichenb. l. c. p. 90, t. 460. fig. 3289; Hartl. Orn. Madag. p. 40.

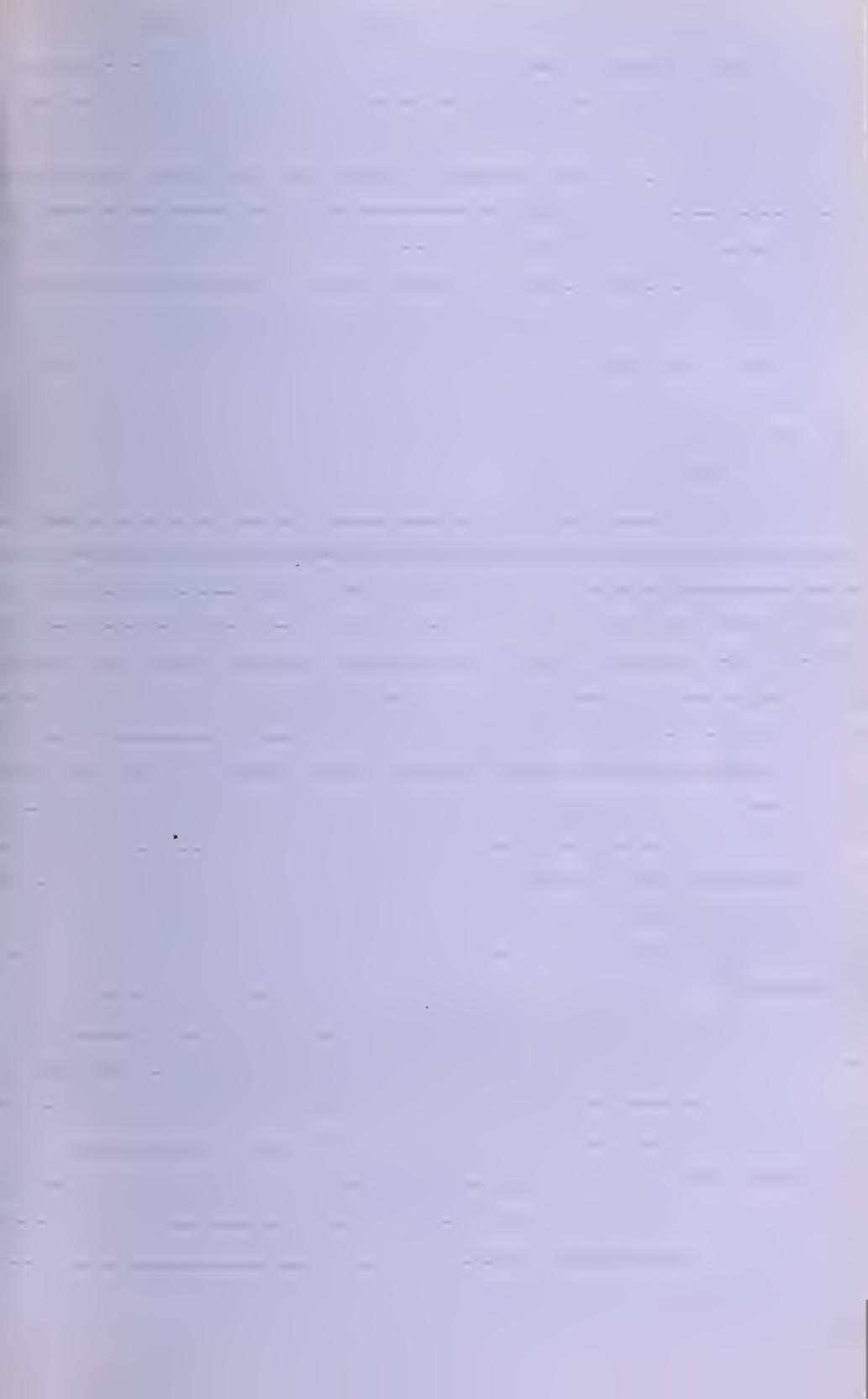
Specimens from Bernier and Goudot in the Paris Museum. Our description is from a fine specimen in the Stuttgart collection.

3. Z. LATERALIS, Sundev.

Supra pallide olivaceo-viridis, subtus albida, lateribus griseofulvescentibus; gnttre crisoque flavis; loris flavis; gula leviter fulvescente tineta; annulo periophthalmico conspicue albo; rostro nigricante.

Long. $4''$; al. $2'' 2''$; tars. $8''$.

Syn. Sundev. Öfvers. Kongl. Vetensk. Ak. Förhandl. 1850, p. 101. *Z. abyssinica*, Guér. Rev. Zool. 1843, p. 162.





XXX.—On a new Species of Tetragonops. By P. L. SCLATER,
M.A., Ph. D., F.R.S., &c. (Plate X.)

THROUGH the kindness of Prof. Baird, of the Smithsonian Institution, Washington, I am enabled to devote the final plate of this series of 'The Ibis' to the illustration of one of the most interesting novelties that I have met with since I commenced my editorial duties. In former volumes of this Journal I have written upon the American Barbets*, and given a figure of the anomalous form *Tetragonops ramphastinus*, which connects this group with the Toucans. I have now the pleasure of making known to my readers the existence of a second species of the same genus, which has been lately discovered by Dr. A. von Frantzius in the mountains of Costa Rica, and which Prof. Baird proposes to call, after its discoverer,

TETRAGONOPS FRANTZII, sp. nov. (Pl. X.)

Olivaceus : macula nuchali elongata nitente nigra : capite undique cum eervice, pectore et ventre medio flavido-fulvescentibus : semitorque pectorali utrinque cinereo, medialiter fere obsoleto : ventre imo crissoque olivaceis, medialiter flavicantibus : rostro plumbeo, apice pallido : pedibus nigris.

Long. tota 7·4 poll., alæ 3·4, caudæ 2·3, rostri a rictu 0·8, tarsi 1·0.

Hab. in int. reipubl. Costa Rica.

Mus. Smithsonianian.

The new species of *Tetragonops* is of considerably smaller size than the type species, *Tetragonops ramphastinus*, and so different in colouring that there is no possibility of their being confounded together. In general characters it is not so strongly marked, and is to some extent intermediate between *Capito* and *Tetragonops*, although certainly to be placed in the latter genus.

The bill is relatively as short as in *T. ramphastinus*; the keel between the nostrils is much elevated, and brought to a sharper edge than in the latter, but outside the nostrils is bevelled off at once, instead of being extended into a broad flattened surface. The curious bifurcation of the extremity of the lower mandible exists likewise in the new species.

The wings are short, reaching to about one-third of the dis-

* See 'Ibis,' 1861, p. 182, and 1862, p. 1.

tance from the base to the extremity of the tail. The first primary is short (about 1·1 in. in length from insertion); second 0·8 in. longer; fourth and fifth equal and largest; third rather shorter than seventh.

The tarsi and feet correspond with those of *T. ramphastinus*.

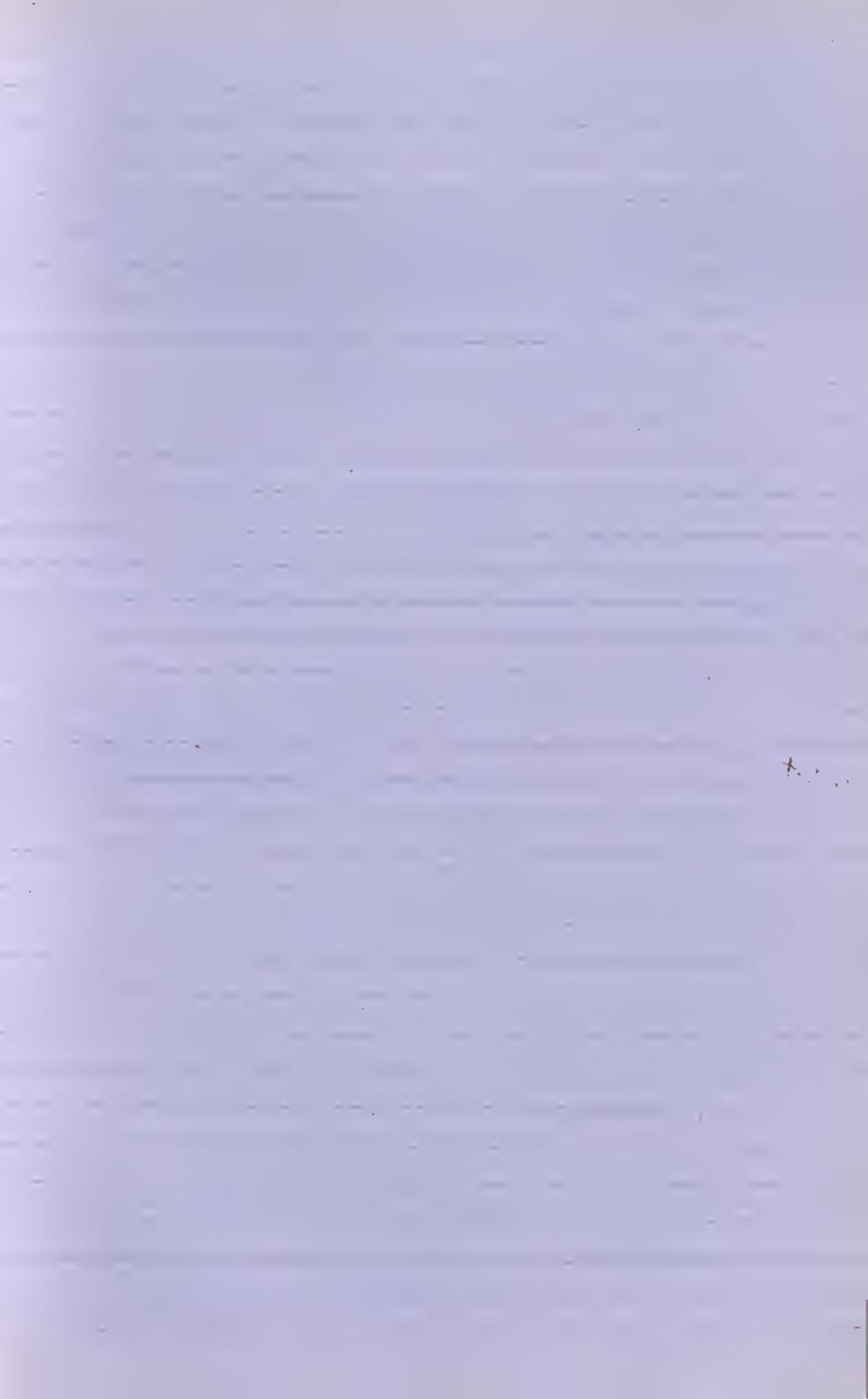
The tail of the single specimen is imperfect, but appears not to differ in form from that of the other species, consisting of ten rectrices, the two outermost of which are half an inch shorter than the medial.

Mr. Osbert Salvin suggests that the specimen may be a female of a more gaudily coloured male; and there are some points in its character, particularly the nearly obsolete grey pectoral band, only showing on each side of the breast, which lead me to think that the opinion may be correct. At present the specimen is unique; but I trust that Dr. A. von Frantzius (who, I believe, is still resident at San José) will before long obtain further examples of this singular bird, and let us know whether there is any distinction between the sexes.

1864
XXXI.—*A Fortnight amongst the Sea-birds of British Honduras.*

By OSBERT SALVIN, M.A., F.L.S., &c.

AT daybreak of the 26th of April, 1862, I reached Belize from Vera Paz, by way of Peten and the Belize river; and finding no schooner in the harbour ready to sail for Yzabal, I seized the opportunity offered for collecting the sea-birds frequenting that part of the coast. It was no easy matter to gather reliable information respecting the haunts of the several species; so after a few short cruises in the neighbourhood, to Spanish Cay, St. George's Cay, Hick's Cay, &c., during which I obtained but a solitary species of Tern and an immature Man-of-war Bird (*Fregata aquila*), I saw at once that, if I wanted to succeed, it would be necessary to look up the birds in their breeding-haunts, and that the further I went, the greater would be my chance of finding them. After some delay, I made arrangements with one Sam Miller, a coloured Creole of Belize, the owner of a small schooner, the 'Mary Ann,' to take me to Lighthouse Reef and Glover's Reef, the outermost atols of the



coast, and wherever else I might want to go. We were to be away about a fortnight, part of which time was to be spent on one of the islands on Glover's Reef, where Sam's father lived, owning the cocoa-nuts that grew there. Sam found employment for his schooner in carrying these nuts to Belize. Their value varies: at the time of my visit they were worth 11 dollars per 1000. They are usually exported in the mahogany-vessels, being packed in the vacant spaces between the logs.

I was fortunate in securing the companionship of an American gentleman, Mr. R., then resident in Belize, who joined the expedition, being desirous of initiation in the mysteries of bird-skinning. We had to lay in a small stock of provisions, as fish and cocoa-nuts are all that the Cays produce; this done, we went on board on the afternoon of the 7th of May, and set sail.

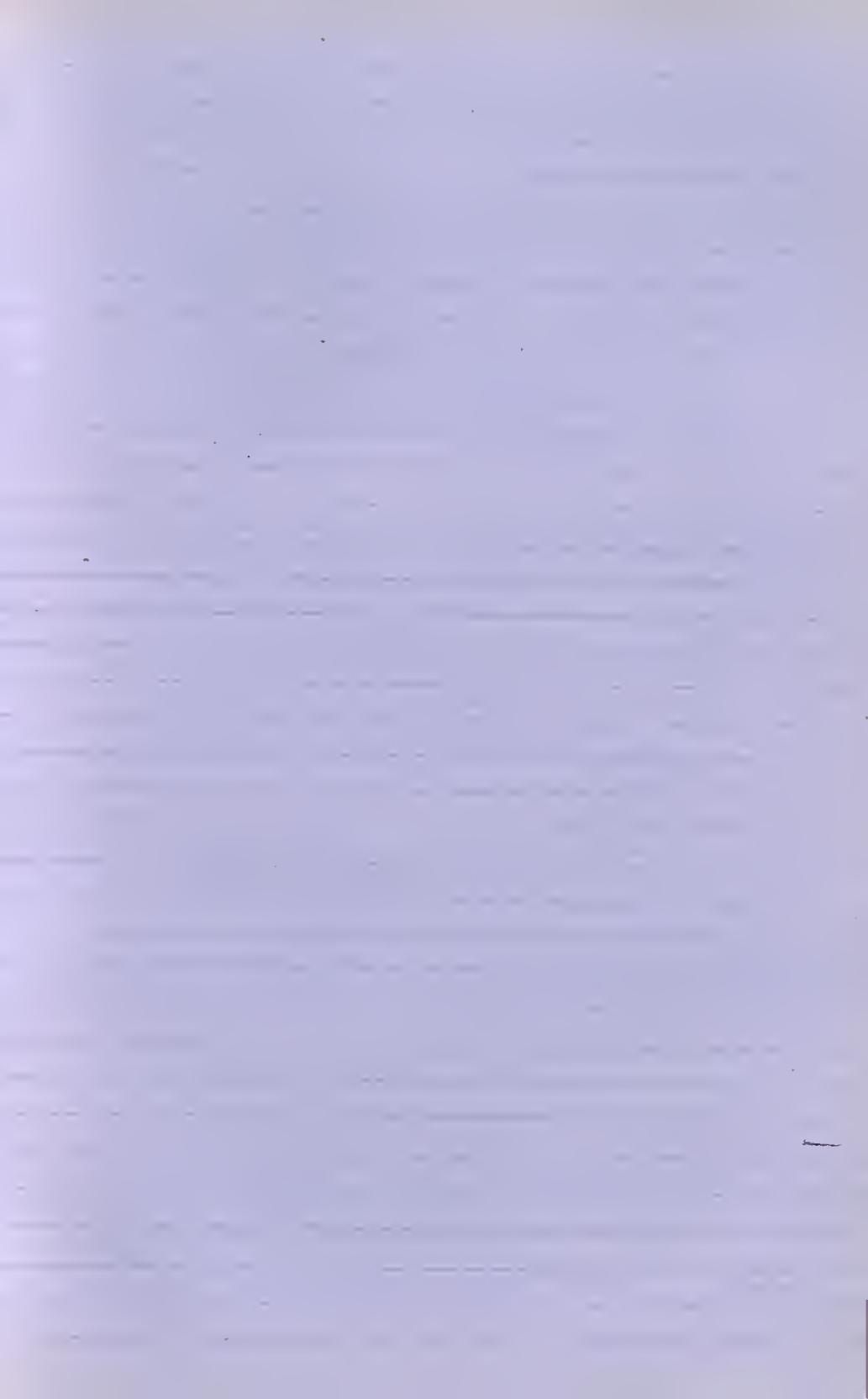
Leaving the 'Mary Ann' to make her way with a strong easterly sea breeze towards English Cay, it would be as well to note the positions and forms of the coral-reefs which line the coast. The main features of these reefs are as follows. The Barrier Reef extends along the shore from Ambergris Cay to Ranguana Cay, its most southern point; this last Cay is twenty-five miles from the coast, so that the reef, instead of running more or less parallel to the shore, forms an angle with it, enclosing a long lagoon, which, as well as the reef itself, is studded with numerous groups of Cays. Nearly due east of Belize, outside the Barrier Reef, and separated from it by a deep channel, lies the atol Turneff, within the encircling reef of which several lagoons are included. Eastward of Turneff, and fifteen miles from it, is another atol—Lighthouse Reef, so called from the lighthouse on Half-moon Cay, one of a group of four Cays at its southern end, the names of the other three being Hat Cay, Long Cay, and Saddle Cay: this last is within the atol. The whole group is also called Southern Four Cays, two more Cays at its northern extremity being distinguished as Northern Two Cays. Half-moon Cay is the pilot-station.

A third detached atol lies twenty miles to the southward of Lighthouse Reef, on the eastern margin of which four Cays are situated, viz. Long Cay, Middle Cay, S.W. Cay, and S.W. of all Cay. The rest of the reef consists of a line of breakers,

a stranded log or spit of sand every here and there appearing above water.

Though the breeze continued blowing freshly all night, it was too much ahead to enable Sam to make Cay Bokel, a small Cay at the southern end of Turneff; so, after passing out through the channel near English Cay, we had to beat up to the anchorage under the lee of the former island, and it was midnight before we came to anchor. In the mean time Mr. R. and I made ourselves as comfortable for the night as the deck of the schooner would allow, having to change over at every tack. At the first trace of dawn we were glad enough to turn out, and, coffee over (before which one does as little as possible in the tropics), the schooner was again got under weigh, when a tack or two took her through a narrow channel into one of the lagoons of Turneff. Here we just crept along, with scarcely wind enough to fill the sails, but startling the few Pelicans (*Pelecanus fuscus*) that were just waking up and stretching themselves before leaving their roosting-places in the mangrove-trees. Bald-pate Pigeons (*Columba leucocephala*), in small flocks of three and four, flew across the bows just out of shot: otherwise all was quiet, and the prospects of spoils from Turneff were not very promising.

Still Sam said Man-of-war Cay would prove fruitful; so for Man-of-war Cay we steered, the breeze freshening as the morning advanced. Before reaching the Cay in question, we passed into another lagoon, through an opening in the mangroves. A few Shags (*Phalacrocorax floridanus*) now flew round, and I shot several as we came to anchor. There was no lack of birds now; for on our approach a cloud of Man-of-war Birds (*Fregata aquila*) rose and hung over the Cay, like Rooks over a rookery; Shags hurried out of the bushes, their laboured flight contrasting with the apparently effortless hovering of their fellow-colonists (no Eagle flies with the ease of a Man-of-war Bird); and here and there a White Gaulin (*Egretta candidissima*) peered out to see the cause of the commotion. The small canoe or dorey was soon lowered; and taking Joe (Sam's brother) to paddle, we started off for a closer examination. By keeping close to the mangroves on the leeward (W.) side, we were able to reach the Gaulins' nests, which however were





mostly deserted, all the young ones of those still inhabited being able to run out along the branches and make their escape. The nests were composed entirely of sticks, and placed near the end of a horizontal bough. With an eye to dinner, we paddled quietly on, while Joe, spear in hand, kept a sharp look-out for fish, a favourite lurking-place for some species being the tangled roots of the mangroves. The Man-of-war Birds, as well as the Gaulins, showed preference for the leeward side, the former occupying the highest mangroves on the island. Old nests and decayed boughs, accumulated on the oozing mud, had made a patch of ground just under where the nests were. For this we paddled, and, on landing, shot four old birds—two adult males in dark metallic chocolate-brown plumage, and two with white underneath, the adult females; no white-headed immature birds were to be seen. These secured and stowed away in the dorey, we began to scale the trees. Joe climbed the first, and found an egg, of which I entreated him to take all possible care. "Treat him kind," shouted I. "Don't be afraid, massa," replied Joe; but Master Joe, on reaching the bottom of the tree, managed to knock the egg against a branch and broke it to bits. "Quite rotten, sar," says Joe, by way of apology. Gladly would I have had a rotten egg to blow, or a chipping shell! But, like the spilt milk, there was no help for it; so, after trying to impress more care on the delinquent Joe, I climbed the next tree myself. It was a curious sight, on thrusting one's head out of the top of a tree, to watch the inhabitants around. Three-fourths of the nests had young birds in them, of various ages: the more advanced were commencing to shoot their scapular feathers; others, younger, looked like puff-balls of pure white; while those which had just escaped from the shell were lying helplessly, as young birds do, on the frail structure of sticks composing their nests. So slight were these, that the young in their earliest infancy must have a perilous time of it. The youngest were guarded by one of the parent-birds, which balanced itself on the edge of the nest. From the unhatched eggs the birds could hardly be prevailed upon to stir. I have several times noticed this reluctance on the part of birds building open nests to leave their eggs exposed to the direct rays of the tropical sun, whereas on cloudy days the same

solicitude was not exhibited. In this Journal (Ibis, 1860, p. 264) I gave a short note of the behaviour of a Hummingbird (*Thaumastura henicura*) on this point, and now I was observing quite a parallel case amongst the Man-of-war Birds and Boobies.. The former of these birds are ready enough to take wing at other times on approach of danger; and the inherent sluggishness of a Booby would hardly account for their sitting so closely. Certain is it that, after incubation has made some progress, the solicitude of the parent-bird, in both cases, is exactly in proportion to the age of its offspring; and I should suppose that when the chick is just on the point of hatching (the most critical period), heat, and not cold, would prove most prejudicial to its chance of coming into existence*. With other species this danger is in a measure avoided by covered nests and the choice of shady situations.

Cutting my meditations short (for with my head protruding from the top of a tree and a terrific sun beating on me, I was little disposed for a very long investigation), I gathered a few eggs, and left the Man-of-war Birds to return to their young. We then climbed along the matted mangrove roots to the northern end of the Cay, to look for nests of the Shag. We had not to search far, for on reaching the outer mangrove-bushes we could see them on the outer boughs, some 12 feet from the water. The nests were strongly built of sticks, hollowed considerably inside, and partly lined with freshly picked mangrove-leaves. The birds were laying their eggs, and some nests had in them what appeared to be their full complement of four eggs; other nests had three, two, and one. The boat being now loaded, we returned to the schooner and commenced securing the spoils, skinning the birds and blowing the eggs while we were gradually beating up to an opening in the eastern side of the reef, called the Grand Bogue†. Passing out at this channel we stood across for Lighthouse Reef, and sighted Long Cay before dark.

* When the embryo is still small, we might infer that the albumen with which it is surrounded affords protection against extremes of temperature. This decreases as the embryo increases, necessitating greater care and protection on the part of the parent.

† Evidently a corruption of Boca Grande.





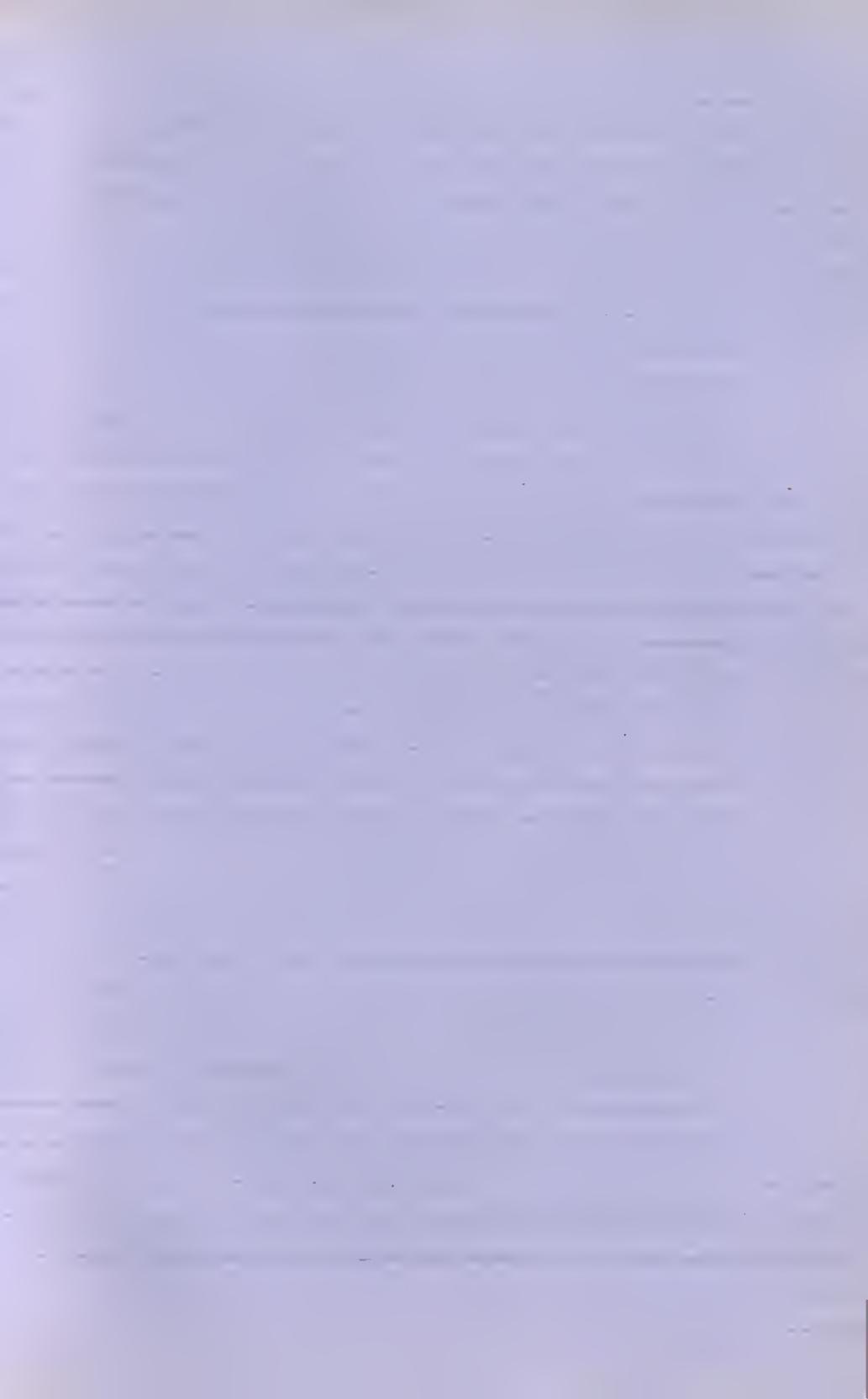
When out on this sort of expedition, sundown is bed-time ; so I had turned in on deck with my blanket, and had had a sound sleep, and was just sensible that we were in smooth water again, when a crunch, and an exclamation from Sam, " High and dry ! " brought me to my feet. We had run into a reef of coral-rocks, and were held fast. The corals were close to the surface, and Sam and the other two lads jumped overboard and commenced operations to get the schooner off. It was an hour before they succeeded, and in the mean time I fell asleep again.

On the morning of the 9th, after passing round the northern end of Long Cay in order to make the passage into the lagoon of the atoll, a tack or two brought us to Saddle Cay—a settlement of Pelicans (*P. fuscus*). Of these there were forty or fifty old and immature birds in about equal numbers ; but on landing we could find no trace of nests in the trees in which they are said to build. Sam said that they built in the months of November and December, and that after the young could fly the old birds pulled the nests down. It was a bold Pelican that first perched upon a tree : a bird less adapted to such a resting-place could hardly be imagined. Yet there they sit on the mangrove-boughs for hours, preening their feathers with their long hooked bills, an amusement they seem to take special delight in, all the time keeping their balance with ease, even when a strong wind tries the security of their footing. Others were resting on a spit of sand that runs out from one end of the small Cay, and on the stranded logs, of which plenty lie scattered along the reefs even of the outermost atolls, being floated out of every stream during the floods of the wet season ; more still were fishing in the shallows. There are few sea-birds more interesting to observe than Pelicans fishing : there is a sort of methodical determination about the way in which they set to work that seems to warrant success ; and I have watched them time after time dart down, seldom failing, on coming to the surface, to bolt the fish they have secured. When a bird does miss, a look of disappointment is ludicrously shown by the dejected way in which it hangs down its bill. Four or five usually rise in company, and flying round to get the requisite impetus and height, with neck drawn in and beak slightly depressed, they suddenly, as it were, stop short in the air,

and dash, with outstretched neck, into the water upon the shoal of fish, which has perhaps shifted a little from the spot on which the last descent was made. They rest but a moment on the water—only time enough to bolt the prey, which is done by throwing the bill upwards, thus slightly distending the pouch—a ready bag to receive the fish, before held between the mandibles. There were a good many King-birds (*Tyrannus intrepidus*) amongst the shrubby trees that grow on the Cay; and a pair of Ospreys (*Pandion carolinensis*) seemed to belong to the place, though I saw no trace of their old nest. The gregarious habits of the American Osprey, in contradistinction to the solitary pairs usually seen in Europe, have been upheld as an argument for their specific difference. I believe, in neither case does the rule hold: certainly the Central-American bird, common as it is on these coasts, has nothing gregarious in its habits. Few of the Cays of which I am now writing are without a pair, and yet I observed no instance of more than a single pair frequenting one island. On the other hand, in Europe instances occur in which a large number of Ospreys are found within a very limited district; but perhaps in neither case can the Osprey be called gregarious, in the strict sense of the term.

On nearing Saddle Cay we steered straight for Half-Moon Cay, keeping just inside the reef. There were several old trees, with their branches above water, lying stranded in the shallows, upon which a few Terns were sitting; but I left them, as we had a colony of Boobies (*Sula piscator*) to visit, and specimens to collect, which would occupy the whole of our time. It is useless to accumulate too much work in those hot districts: the specimens collected during the day must be skinned before the next, or they are sure to be lost, and the skinning must be thoroughly done, especially in the case of sea-birds, or the specimen will prove of little value. The making up of the skin is of least importance, and time is often lost by too much attention to extra finish.

The northern end of this Cay, which is long, and shaped as its name implies, is occupied by the pilots, who have their houses scattered about under a grove of cocoa-nuts. There are but few mangroves; but the southern portion, as well as nearly



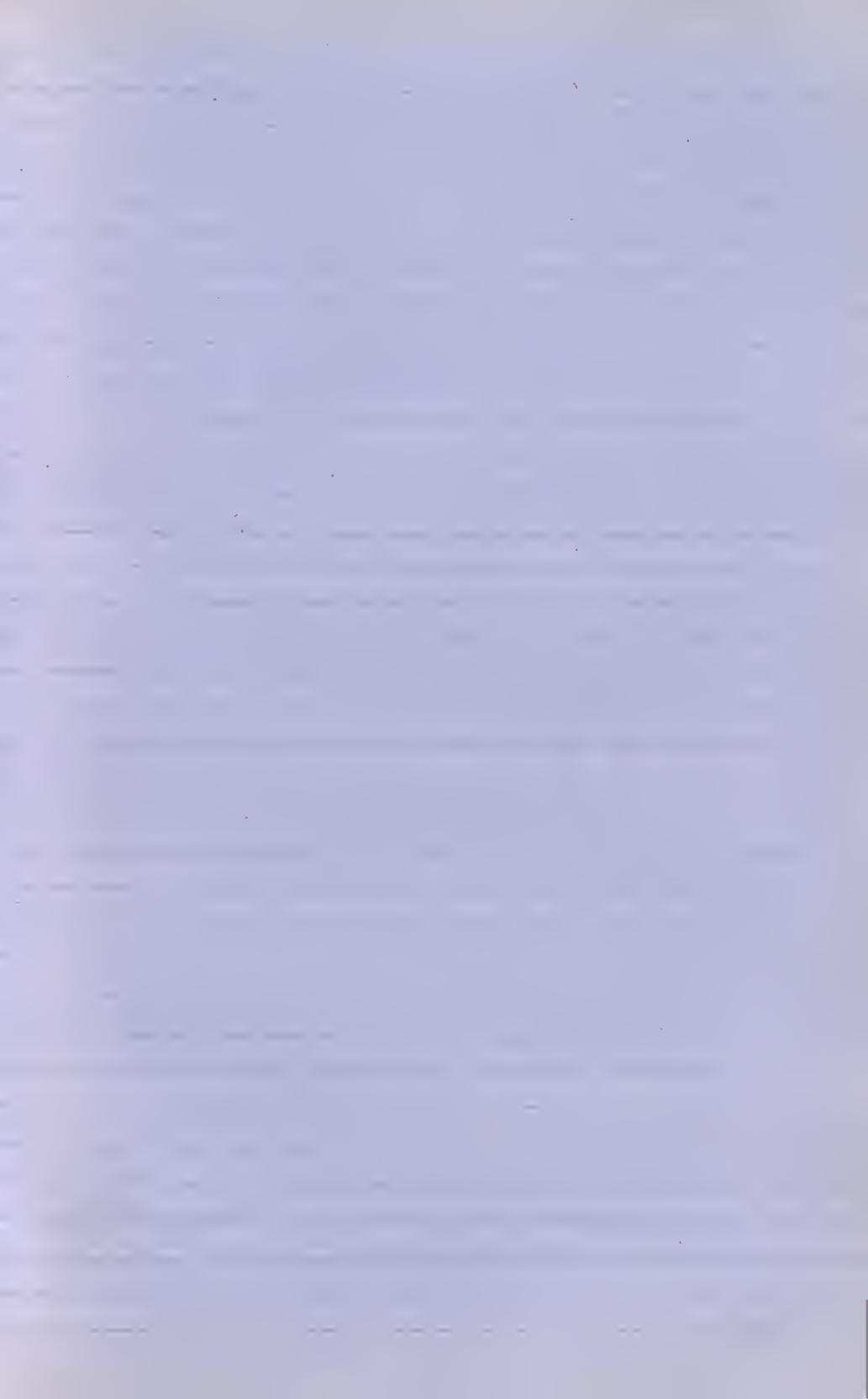


the whole windward side, is covered by low "bush." A large colony of Boobies (*Sula piscator*) hold entire possession of this portion of the island, every tree having four or five nests in it. By the time we had made acquaintance with some of the pilots, and had taken a "long drink" of cocoa-nut milk (a luxury after the stale water we had had to put up with on board the schooner), it was mid-day; yet we made our way through the trees to search for Boobies' eggs. The sky was clear, and the heat intense, the sea-breeze not yet blowing with any force, and the foliage not being thick enough to afford much shelter from the scorching rays of the sun. The Boobies, too, seemed affected by the heat, and sat panting with open beaks; some, still more overcome, were resting against a branch, with their heads hanging down, and eyes shut. At first I thought these were dead, but, on stirring them up, succeeded in making them open their eyes; I could not, however, prevail upon them to get up; they only screwed their heads about with a sort of expression that seemed to ask me what I meant. Over many of the nests one of the old birds sat, and in the same trees the fully fledged young still remained. The young were of every age, their plumage including every stage, from the white down of the newly hatched chick to the grey dress of the full-grown. In some few, still older, the white dress of the adult was beginning to show itself. The name Booby is most appropriate; I never saw a bird with less idea of getting out of one's way, or caring less for what one did. Walking about under the trees was nothing; they hardly condescended to look down: nor when we stirred them up while taking a "siesta," pulled their tails, poked them off their nests, and fought with them for their eggs, and bullied them in every way, did we succeed in getting up any sort of excitement in the colony. They took everything with the greatest indifference, with a complaisant, grave expression that was laughable to watch. And yet a Booby is no fool at fishing; rare sport they must have of it, flying at the pace they do, and taking such headers. It was too hot to climb to every nest within reach; and, after trying a few, we found that there was always a chance of an egg in a nest upon which, and not near which, an old bird sat. Even in this way, after a long search, we only secured

four rotten eggs. A few Man-of-war Birds breed in the same trees, nearly all of which had eggs. This Booby makes a nest very like the Man-of-war Bird, i. e. of twigs rather untidily laid together in a convenient fork in the top of a tree. I could not easily calculate the number of birds in this colony, but there were certainly several thousands. Returning to the cocoa-nut grove, we rested a short time to cool down, and then looked quietly about for small birds, as I had seen several species round the houses. Amongst them I was delighted to find the *Melanoptila glabrirostris*, Sel., a rare and curious form of Mockingbird, with a uniform glossy blue-black plumage.

- I had been looking out for it everywhere in Vera Paz, knowing that the first specimens had been obtained in Honduras, but in vain. Besides its rarity, the doubt with which Dr. Selater referred it to this section of the *Turdidae* made it a doubly interesting discovery, and I consequently watched it with greater eagerness. It is, I believe, rightly placed, as the habits of the bird agree well with the Mock-bird of the district (which also occurs on the Cays), not only in its actions and flight, but in its sweet though short song. I was too early to obtain its eggs, but a pilot assured me they were blue, which was corroborated by Sam. It goes by the name of the "Georgy Bird" amongst the Creoles. I could only hear of its occurring on the outer Cays, viz. those of Lighthouse and Glover's Reefs. I found, too, another bird new to me (*Dendræca vieilloti*, Cassin), belonging to the American Warblers. It resembles the common *D. aestiva*, but differs in having a chestnut throat. Two Humming-Birds occur, *Lampornis prevosti* and *Amazilia cinnamomea*; two species of Tyrants, *Tyrannus intrepidus* and *Elainea sub-pagana*, and the Bald-pate Pigeon (*Columba leucocephala*). I also shot *Euspiza americana*.

They say that these outer Cays, at the time of the autumn migration, swarm with small birds, which stay to rest on their passage. A large Lizard (*Iguana*, sp.?) abounds on this Cay: one or two may be seen in almost every tree, basking on the branches, or making their escape by scrambling from bough to bough. Small Lizards (*Anolis*, sp.), too, peer at one round the cocoa-nut trees, and, waiting a moment to extend their highly





coloured throat-pouches, vanish behind the tree as one approaches too close. The whole afternoon was taken up with skinning a series of the different plumages of the Booby and the few small birds I had secured; but just before sunset I again walked round the island to watch the Boobies returning to roost from their fishing-grounds. They came trooping back in flocks of twenty or thirty, the greater portion from windward, and flying at a dashing pace. They did not settle at once, but kept sailing round and round till after sunset. While watching them, I recognized a single immature bird of the common species ✓ (*Sula fiber*), its browner throat enabling me to detect it. I saw no others there, but afterwards at sea several flew round the schooner. Having pretty well finished the day's work, we slung our hammocks in the rigging, and slept soundly till dawn.

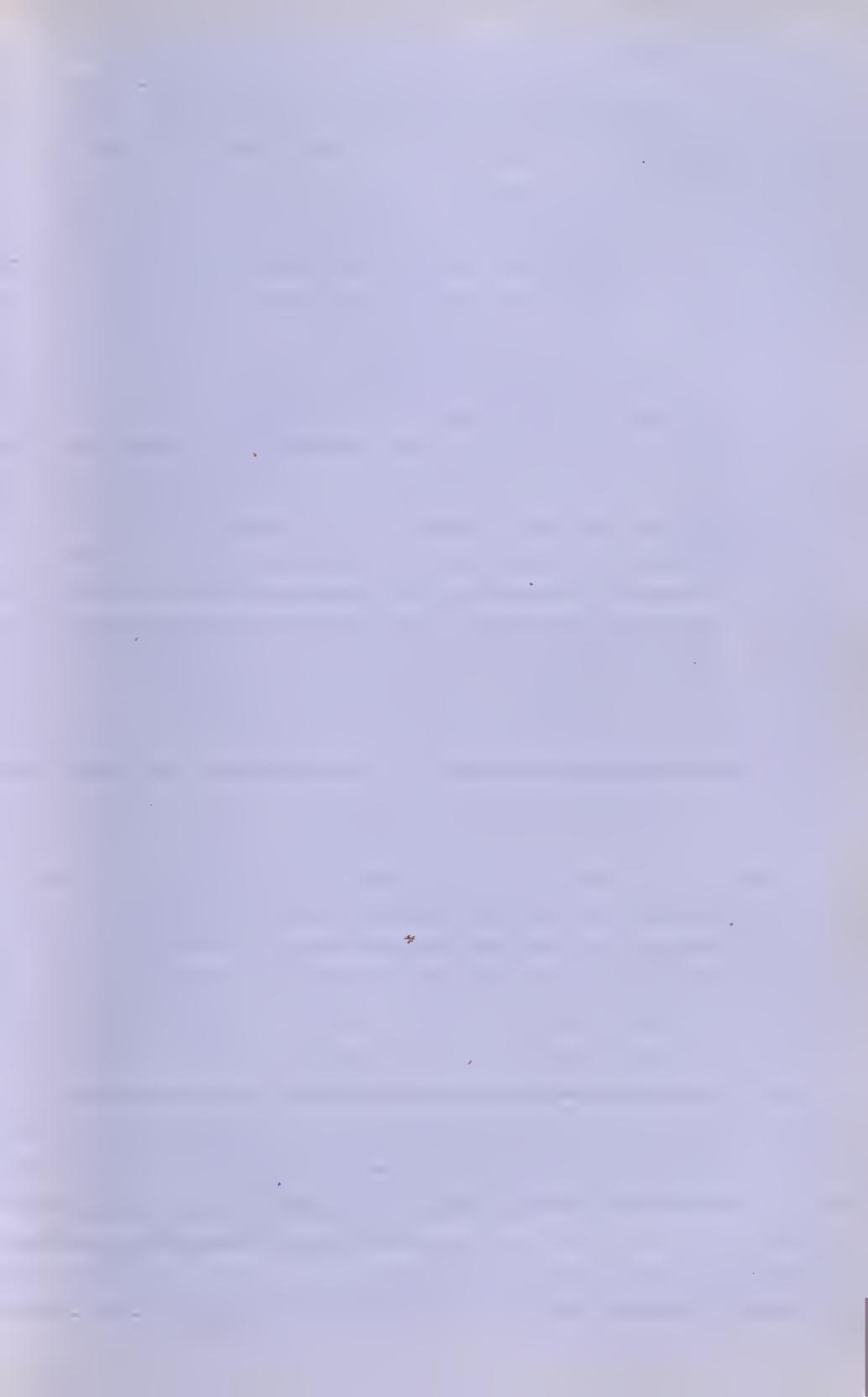
May 10th.—Remembering the Terns we had left the previous day about the old snags on the reef, I returned in the schooner to Saddle Cay, shooting a specimen of *Thalasseus acuflavidus* by the way. At Saddle Cay we found a fresh arrival of Terns and ✓ Laughing Gulls (*Larus atricilla*). The former all belonged to ✓ a second species of Sooty Tern (*Haliplana panaya*). No time had been lost by the Terns, for on searching the Cay we found four eggs had already been laid. A little sand was scratched away for a nest, under such shelter as the bushes that grew nearest the beach afforded. This *Haliplana* is known to the Creoles as the "Rocky Bird." It is a very graceful species, though its flight is rather heavy for a Tern, not having the same dash about it that so strikes one on watching its congener *H. fuliginosa*. The eggs are rather less ruddy and smaller than those of the commoner species, but similar in other respects.

There was nothing more to be done now at Lighthouse Reef beyond replenishing our stock of wood and water, which occupied the remainder of the afternoon. Fresh water, such as it is, may always be obtained on these Cays by digging a hole in the sand some distance from the beach, and then burying a tub with the ends knocked out to keep the sides of the hole from falling in. In the course of a few hours water filters through, which at first has but a slightly brackish flavour. This increases as the water stands, till it becomes too strongly impregnated with salt to

drink. The tub is then removed, and buried in another hole. During the dry season, the few people who live on the Cays have no other supply. Of wood we could always find enough from the broken spars, boards, and logs thrown up on the beach.

Rounding the south end of Half-Moon Cay, the schooner passed out into open water, and Sam steered her straight for Glover's Reef. The wind was light, the water lumpy, and the sun intensely hot as we slowly made our way across. I was glad enough when I detected a white line of breakers far ahead. This was the northern end of the reef, towards a gap in which we steered. Passing through this channel, Sam pointed to the spot where the schooner 'Susan' was wrecked, with 300 filibusters on board, some few years ago, as they were sailing to join Walker on the coast of Honduras, for the purpose of attacking Nicaragua, after passing through that republic. This disaster put an end to the expedition for the time, the shipwrecked adventurers being taken back to New Orleans by a British cruiser. The next attempt upon the same point put an end to Walker's career, when he was taken by the 'Icarus,' handed over to the Honduras authorities, and shot. Sam had many a story to tell about them, how he and his brothers had fished up muskets and sold them in Belize, and how a party of the filibusters whilst living on Middle Cay had shot his mother's pigs with their revolvers, and eaten his father's cocoa-nuts. Once inside the reef, there was not much time for talking, as patches of coral-rock studded the lagoon, and the schooner dashing along under the freshening breeze required careful steering.

Middle Cay now stood before us, and, anchoring under the lee of the island, we went ashore with our hammocks, and took possession of an empty hut built out of the wreck of the 'Susan.' There is little variation in all these Cays, one sees the same repetition of cocoa-nut groves and mangrove-swamps, the latter, when present, being usually in the middle of the island. The cocoa-nut trees have most of them been planted by the occupier of the Cay, the "bush" growing on the sandier portions being cleared for the purpose. It is said that in five years a tree produces its first fruit; and that it lives for sixty or more, if not uprooted by a storm. Cocoa-nut growing seems profit-

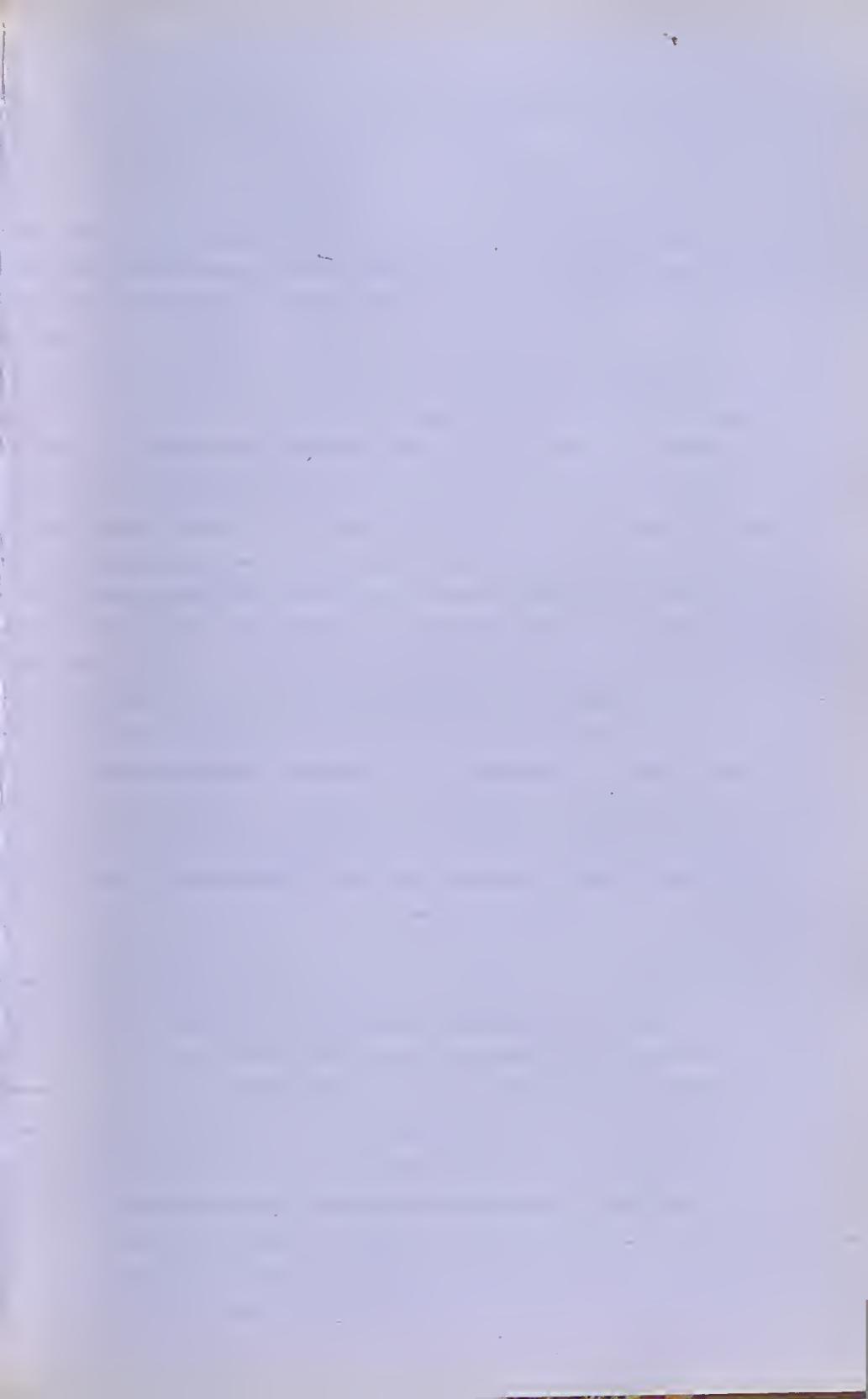




able enough, but doubtless has its drawbacks. Fancy undergoing voluntarily a Robinson-Crusoe life for years on an island only large enough to hold yourself and your cocoa-nuts! Yet it suits a tolerably well-to-do negro admirably; he has plenty of opportunity "to cock up his toes, to make the time pass." But I must not be hard upon the inhabitants of Middle Cay; if contentment is a blessing, they were blessed, and they made Mr. R. and myself as comfortable as they could the few days we passed there. Bald-pate Pigeons are common on this Cay, and every evening about sunset I used to bag a few, those not wanted for the collection going as a contribution to the larder. A single Fern (*Acrostichum aureum*) grows on this Cay, the common species of all the lowland swamps of the West Indies. I do not know how many brothers Sam had, in addition to Joe: his big brother Bill, with a bigger schooner than the 'Mary Ann,' was at the Cay, calling for cocoa-nuts. He too worked like Sam with a prospect of a Cay and cocoa-nuts before him. Having to complete his cargo at South-west-of-all Cay, I went with him to visit the colony of Noddies. The distance was short, and all inside the reef. I was prepared to see a good many birds, but nothing approaching the numbers that are there crowded on one small island. Noddies everywhere: Noddies at sea and fishing in the shallows; Noddies in the cocoa-nuts and mangroves; Noddies basking by scores on the sands, and flying through the trees by hundreds. There must have been many thousands in all; and what must the numbers have been when the Sooty Terns flocked to the same island in such numbers that their eggs might be gathered by the basketful? I had hardly put my foot ashore when I discovered there were two species of *Anous* on the island, the second species being *A. tenuirostris*, and easily recognized. Instead of the cawing note of the common species, the "Piccary Noddy," as the Creoles call it, has a more Tern-like cry, whence, perhaps, its name. The nest of the Noddy is made of sticks—a large loose structure heaped together at the top of a cocoa-nut tree, or on the outer branches of a mangrove. That of the "Piccary Noddy" is small and compact, made of slender twigs, seaweed, and bits of grass, and glued together in every available fork and on every horizontal branch.

These latter almost exclusively monopolize the high mangroves on the windward side of the island, while the larger species keeps to the coco-nuts. Both were as tame as could be, and cared little for my climbing the trees to investigate their domestic arrangements. The eggs of the "Pieary Noddies" were on the point of hatching, whilst those of the Common Noddy were already hatched. Again reverting to the numbers, in one tree there were over seventy nests. The egg of the Pieary Noddy is nearly the counterpart of that of the common species, only smaller, and perhaps more highly marked; but I saw a larger series of the former. It was hot work, indeed, climbing the trees at midday, and the consumption of young coco-nuts was considerable; they form an excellent substitute for brackish water, and are certainly more wholesome. So ended our day at Southwest-of-all Cay; and so much work had accumulated on our hands that we determined to spend the next in working up arrears, as what with a Pelican and Noddies to skin, and eggs to blow, we had enough to do.

Glover's Reef is a favourite haunt for turtle, and, during the season, nets are constantly set to catch them. Immediately on reaching the Cay, Sam had set ten nets, and we now went in the dory to see the result. The net is usually about forty or fifty yards long, sometimes more, and about four yards deep. It is made with a very open mesh, often more than a foot square. At one end a log is fastened and anchored with a large stone, along the top runs a row of floats, and at the other end a log cut in the form of a turtle. This acts as a decoy. The turtle, on striking the net, rolls itself up in the meshes, and becomes effectually entangled; the two buoys are drawn together, and the fisherman knows from a distance whether he has been successful or not. We had a lucky morning's sport, and secured two turtles. It requires some dexterity to haul such a heavy brute on board so small a craft; but Sam managed matters well, being ready prepared with a "turtle-peg" to spear the animal, should the net be insecurely wound round it. This peg or spear is so arranged that the barb only pierces the shell. Returning, we visited Long Cay, a resort of Pelicans. Here I found a few pairs of the Lesser Tern (*Sterna antillarum*) just preparing to lay.



I also added another specimen of *Thalasseus regius* to the collection.

One more day at Middle Cay, and we were again under weigh, standing westward for Southern Water Cay and the main reef. A search on two small Cays (Ellen and Curlew Cays) produced a single specimen of *Haliplana fuliginosa* and a Turnstone (*Strepsilas interpres*). I also gathered a few more eggs of "Noddy" and "Rocky Bird." Leaving Water Cay, where we had anchored for the night, the schooner was steered along the inside of the reef, towards Cay Glory channel, stopping at "Sawpit Cay" and "Tobaceo Cay." On the latter was an old Osprey's nest in a dead tree, which looked as if it had been occupied for years, a little being added each year, till the pile of sticks was several feet high. A large flock of *Hydrochelidon fissipes* was seen ahead; but before the schooner could reach them they had worked too far to windward, so I jumped into the dory, paddled off in pursuit, and succeeded in securing several specimens in all stages of plumage.

My original intention had been now to return to Belize; but I had not seen enough. There were the "Curlews" (*Eudoeimus albus*), Spoonbills (*Platalea ajaja*), "Gulls" (*Thalasseus acutifidus*), and several other species yet to be met with; so I determined upon another round, and steered again for Cay Bokel and Turneff. On the way, three Boobies (*Sula fiber*) flew round, but out of shot. This species is said to breed on Mauger Cay, at the northern end of Turneff, also in great numbers in some of the Cays of Cape Gracias á Dios. I saw but few of them the whole time I was out. Landing on Turneff, I shot another Turnstone and a Bartram's Sandpiper (*Actiturus bartramius*), but was disappointed at not finding the Lesser Terns breeding on a small Cay which Sam said they formerly frequented. A good supply of fish from the reef, which Sam speared whilst I was shooting, made some amends for the delay, as, our stock of provisions falling short, we had to depend upon Sam's dexterity with the spear.

Hat Cay was our next anchorage. It was now the 18th of May, and the dry season and sea-breezes almost at an end. Clouds were hanging over the land, and gathering waterspouts

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on all sides indicated a coming change. Sam began to talk ominously of a week or so without being able to stir—a pleasant prospect in so hot a place, and with nothing to do! We drifted in a calm all the morning, but afterwards, by the help of a few flaws, managed to gain the inside of the lagoon; then there was occupation enough. The water being like glass, we could see all that was going on beneath us; and a wonderful sight it was—sea-fans waving to and fro, corals of every form growing in fantastic shapes like trees and bowers, showing here and there a rent through which the water looked dark and blue. We were just on the edge of the reef, at one moment looking on this watery garden, and the next over the coral-wall where the growth stopped, and the depth sank suddenly. Grotesque-looking fish, too, were swimming about, some playing amongst the corals, others darting past, pursuing or pursued. A Shark also would swim round, giving one half a shudder, it looked so close. An hour spent thus was sooner gone than in whistling for the wind, and a ripple on the water veiling the vision beneath made us aware that the sea-hreeze was not yet beaten. It came, and, blowing all the harder for the delay, carried us along towards Northern Two Cays at a pace that made up for lost time.

Towards the northern end of the lagoon the channel becomes exceedingly intricate, and, in spite of all Sam's care and one of the boys on the look-out to direct him, we were brought up suddenly against a patch of coral—luckily during a lull, or the 'Mary Ann's' timbers must have started; as it was, she was apparently none the worse, being accustomed to such hard knocks. We had to stop and anchor midway, night coming on before we could thread the channel. The visit to Northern Two Cays proved rather a failure: the "Gulls," as they are called (*Thalasseus acutiflavidus*), had not yet assembled. A pair of *Dolichonyx oryzivorus* and a Sanderling (*Calidris arenaria*) were added to the collection, the former being an acquisition—the first specimens I had seen in Central America. Near Cockroach Cay a channel opens into the lagoons of Turneff, some miles to the northward of the Grand Bogue. We steered for this point, and on entering the lagoon passed along between the reef and the



bank of mangroves,—the atol having, as it were, a double reef, the inner covered with trees, the outer broken here and there with a small island. Looking eastward, I noticed a clear light in the sky, and calling Sam's attention to it, he said it was the reflection of the "white water" of Lighthouse Reef. This appearance arises from the white reflection east by the breakers and the sandy shallows adjoining. On reaching Grassy Cay, ✓ Lesser Terns (*Sterna antillarum*) rose in a cloud as the anchor dropped. Our visit was well timed, as above a hundred pairs had assembled to lay. Numbers of nests were already occupied, each containing one, two, or three eggs; they were simply depressions in the sand scratched out by the bird. A few ✓ Roseate Terns (*Sterna paradisea*) also frequented the island, as ✓ well as the White Ibis (*Eudocimus albus*) and a Ring-Plover ✓ (*Ægialitis wilsonianus*), of which I found two nests. On an adjoining Cay were old nests of the large White Egret (*Herodias egretta*); and skulking amongst the mangroves I saw a "Boat-bill" (*Cancromia cochlearia*). We also came upon some nests of the Ibis in the mangroves, but no eggs. One more day took the schooner through the lagoons of Turneff, across the channel to English Cay, and so back to Belize, bringing one of the pleasantest fortnights I ever enjoyed in Central America to an end. A few days more, and I was again bound for the interior; my spoils for Europe.

XXXII. *Notes on certain Central-American Laridæ collected by Mr. Osbert Salvin and Mr. F. Godman. By ELLIOTT COUES, M.A., M.D.*

A COLLECTION of Central American *Laridæ* having been kindly transmitted to me, at the Smithsonian Institution, for examination, by my friend Mr. O. Salvin, I have made the following identification of its species*.

* The collection transmitted to the Smithsonian Institution, which Dr. Coues has been so kind as to name, did not include all the species we collected, nor all the specimens. I selected from the whole such a series as would enable me to identify with accuracy the remainder; and only omitted to send three well-known species, viz. *Chroicocephalus atricilla*,

LARINÆ.

1. BLASIPUS HEERMANNI, Bp., ex Cass.

A very young female. It is entirely fuliginous, with no signs of the white head or of the general plumbeous hue of the adults. The bill flesh-coloured, its terminal third black; the feet black; the worn wing-coverts, tertials, and tips of the wings and tail greyish brown.

a. Young ♀, Chiapam, Pacific coast of Guatemala, January 1863; (and several other specimens in similar plumage.—O. S.)

✓ 2. CHROICOCEPHALUS CUCULLATUS, Bruch, ex Licht.

A single immature specimen, identical with the numerous North American examples which have been identified with the *Larus cucullatus* of Professor Lichtenstein by both Mr. Lawrence and myself. There is an incomplete hood; the front and cheeks are mostly white; the bill and feet blackish; none of the characteristic markings of the primaries as yet apparent.

a. Chiapam, Guatemala, January 1863.

3. CHROICOCEPHALUS ATRICILLA, Linn.: Coues, Proc. Acad. Nat. Se. Philad. 1862, p. 309.

We have specimens from both coasts,—those from the Atlantic in summer plumage, perfectly or partially assumed; those from Chiapam, on the Pacific, in winter or immature dress. The latter have the tarsus slightly longer, and the bill somewhat stronger, than the former; but these characters, showing variation between individuals from the same locality, are of insufficient value to make any separation of the species justifiable.—O. S.

STERNINÆ.

✓ 4. THALASSEUS REGIUS, Gambel.

The numerous examples of both adult and young are quite identical with the common North American bird.

a, b. Chiapam, January 1863; c, d. British Honduras, May 1862 (a. adult ♂; b, c, d. immature); (and several other specimens.—O. S.)

Haliplana fuliginosa, and *Anous stolidus*. These, in order to render Dr. Coues's notes perfect as far as our collection is concerned, I have ventured to incorporate into his paper.—O. S.

4.2. = L. franklini.

4.4. = T. maximus, Bodd.

45. = T. galericulatus, Lich.

46. = T. caurianus.

✓ 5. *THALASSEUS ELEGANS*, Gambel.

The single specimen is absolutely identical with a typical *T. elegans* from California; but, being an immature or winter example, it entirely wants the rosy hue of the under parts of full-plumaged birds. It is the first specimen I have seen in this condition.

a. San Salvador, December 1862. (Shot by Capt. Dow.—O. S.)

✓ 6. *THALASSEUS ACUFLAVIDUS*, Cabot.

The eight specimens are somewhat smaller than the average of North American examples, agreeing in this respect with numerous individuals from the Antilles. All are undoubtedly specifically identical.

a. b. Immature birds, Chiapam, Guatemala; January 1863; (and other specimens.—O. S.)

7. *GELOCHELIDON ANGLICA*, Bp., ex Montag.

Quite identical with numerous North American and European specimens. The single specimen is in full winter plumage. The pileus is only represented by numerous delicate, sharply defined shaft-lines of black, which, on the auriculars, blend into a dusky spot. The forehead is pure white. There is a sharply defined antecular black lunula.

a. Male, adult, winter plumage, Chiapam, February 1863; and other specimens.

8. *STERNA PARADISEA*, Brünn.

A fine adult example, smaller than the average of North American specimens, but otherwise quite similar.

a. Male, "Grassy Cay," May 20, 1862 (one other specimen.—O. S.).

9. *STERNA* — ?

A very young example, which I find it impossible to label with certainty. It is almost exactly like *S. paradisea*; but the upper parts are rather too dark, and the primaries want the most essentially diagnostic character of those of *S. paradisea* (*vide* my "Review of the Terns of North America," in Proc. A. N. S. Philadelphia, December 1862, p. 551). At the same time, the colours of the bill, and some other peculiarities, preclude its definite reference to *S. hirundo*, which it otherwise re-

sembles. It is probably, however, *S. paradisea*; which opinion is strengthened by the fact of there being an adult *S. paradisea* in the collection, but no *S. hirundo*.

a. Very young ♀, San José de Guatemala, December 8, 1862.

✓ 10. **STERNA FORSTERI**, Nuttall.

An immature bird, in pretty much the plumage figured and described by Audubon under the name of *S. havelli*, and identical with numerous examples of young *S. forsteri* in the Smithsonian Museum.

a. Young ♀, Lake of Ducñas, Guatemala, October 28, 1862.

✓ 11. **STERNA ANTILLARUM**, Coues, ex Lesson.

An adult example, identical with numerous North American and Antillean specimens.

a. Adult ♀, Glover's Reef, British Honduras, May 14, 1862; and other specimens.

In Cabanis' 'Journal für Ornithologie,' 1861, p. 346, Dr. Gundlach has recently presented this species under the name of *Sterna superciliaris*, Vieillot; which he considers to be the same as *S. antillarum*, Lesson, and *S. frenata*, Gambel. The impropriety of this identification of Vieillot's name will be, I think, quite palpable from the following considerations:—*Sterna superciliaris*, Vieillot (Ene. Méth. p. 350), is based upon the "Hati eeja blanca" of Azara, and is consequently a South American bird. Now Vieillot's description, though brief and somewhat vague, unquestionably refers to some species, in immature plumage, of the subgenus *Sternula*, i. e. a small species, like *S. minuta*, *S. antillarum*, &c., with a white-fronted lunula. I have before me a Sternule, collected at Bogota, which is exceedingly distinct both from the North American *S. antillarum* and from the European *S. minuta*, and which I think is unquestionably the species referred to by Azara and Vieillot. It is at once to be distinguished from *S. minuta* by the plumbeous of the mantle extending over the rump and upper tail-coverts. Agreeing with *S. antillarum* in this respect, it differs from the latter species as follows:—It is considerably larger, the wing from the earpal joint measuring half an inch more. The bill is disproportionately larger and more robust, exceeding that of *S. minuta* by as much as, or more than,





that of the latter surpasses that of *S. antillarum*. It moreover has no black apex, and is basally of a greenish hue. The legs are of an oliveaceous greenish instead of a clear yellow. The black hue which separates the white frontal lunula from the white of the cheeks is very narrow and imperfect. The proportions of tarsus and toe are somewhat different. Length of bill, from the forehead, 1·40 (English inches and hundredths); height at base ·35. Wing, from the carpal joint, 7·00.

If this be not the *S. superciliaris*, it is doubtless an undescribed species.

12. HYDROCHELIDON FISSIPES, G. R. Gray ex Linn.

The common bird of Europe and North America.

a. Adult ♂, Southern Water Cay, British Honduras, May 1863; and other specimens.

13. HALIPLANA PANAYA auct. (nee Gmel. et Lath.).

Mr. Salvin's specimen of *Haliplana* is identical with numerous examples in the Philadelphian Academy's Museum, from the Antilles and other localities, including specimens received from Mr. Gould, from Australia, labelled by him "*Onychoprion panaya*." Individuals of this widely distributed species from the most diverse localities are all absolutely identical. The form of the species agrees closely with *H. fuliginosa*, the type of the genus *Haliplana* or *Onychoprion*; but the colours are very different. The bill and feet are black. The cap, nape, and a line from the nostrils through the eyes glossy black. Primaries black; their inner webs with a median longitudinal white space; their shafts brownish black. Entire upper parts deep greyish slate. Front broadly white; the colour extending backwards over the eyes as a conspicuous superciliary streak. Whole underparts white. Tail a lighter shade of the colour of the back; the more internal rectrices bordered on their inner webs with white; the two external rectrices on each side white, with only a small part of their inner webs slate-coloured, the amount of the slate-colour varying greatly with individuals. Mr. Salvin's specimen has a somewhat broader white front than any other examples I have seen.

This is the species which is identified with *S. panayensis*, Gmel.

(*S. panaya*, Lath.), by the majority of modern ornithologists, and generally called *Haliplana* or *Onychoprion panaya*. But, for my part, I can see nothing in the diagnoses either of Gmelin or Latham by which they can be supposed to refer to the species in question. I consider Gmelin's name as referring, in all probability, to the *S. fuliginosa* from the Pacific Ocean, described by Forster as *S. guttata*, and again by the same author as *S. serrata*, and by Bloxham (Voy. Blonde) as *S. oahuensis*. This "*S. fuliginosa ex Pacifica*" has been by some authors considered as distinct from the common North American *S. fuliginosa*; but on examining a large series collected by the United States Exploring Expedition, I find them to be quite identical. Other specimens from Australia are also specifically the same. Therefore I consider that the name *panayensis* or *panaya*, Gm., Lath., is synonymous with *fuliginosa*, Gm. If such be the case, then the well-known species now under consideration has yet to receive a tenable specific appellation*. A third species of *Haliplana*, besides *S. fuliginosa* and the present one, is the *Haliplana lunata*, mihi, ex *Sterna lunata*, Peale, Ornith. of the U. S. Exploring Expedition. This is a typical component of the genus *Haliplana*, and is very closely allied to the species under consideration, the general distribution of the colours being entirely similar. It is, however, a perfectly valid and distinct species, differing somewhat in size, and very decidedly in the shade of the upper parts, as well as in some minor points of coloration. These three species are all that compose the genus *Haliplana*, as far as my knowledge extends.

a. "Lighthouse Reef," British Honduras, 10th May, 1862; and other specimens.

14. HALIPLANA FULIGINOSA, Gm.: Coues, Pr. Ac. Nat. Sc. Philad. 1863, p. 556.

One specimen only, from Curlew Cay. Agrees with specimens of the well-known species.—O. S.

15. ANOÜS STOLIDUS, Linn.: Coues, Proc. Ac. Nat. Sci. Philad. 1862, p. 557.

Numerous specimens from Glover's Reef I have seen, but did

* See my forthcoming "Monograph of the *Laridæ*" (where the species is named *H. discolor*) for further elucidation of this point.





not obtain, specimens of the Noddy of the Pacific coast, which Dr. Coues now separates under the name of *A. frater*.—O. S.

16. ANOÜS TENUIROSTRIS, Temm.

The specimens are identical with examples labelled “*A. tenuirostris*, Temm.” in the museum of the Philadelphian Academy; and, so far as I can judge, this identification of them is correct. Setting aside the common *A. stolidus* and my *A. frater*, its Pacific representative, and some species, e. g. *A. parvulus*, Gould (*A. cinereus*, Tréboux), which have been improperly referred to the genus *Anoüs*, the remaining valid species are *A. melanops*, Gould, *A. leucocapillus*, Gould, and *A. tenuirostris*, Temmirek, all three very closely allied to each other. I believe they may be briefly distinguished thus:—*A. melanops* has white under-eyelids, and the very dark circumocular region rendered still more conspicuous by the ashy hue of the lores. *A. leucocapillus* has no white on the under eyelid; and the lores are of one colour with the dark circumocular region. *A. tenuirostris*, like *A. leucocapillus*, has the lores very dark coloured; but it has white under-eyelids. It is also notably smaller.

a. Adult ♀, “Glover’s Reef,” British Honduras, May 12, 1863.

The collection thus embraces fifteen or sixteen species of eight genera of two subfamilies of *Laridae*.

XXXIII.—Recent Ornithological Publications.

1. ENGLISH PUBLICATIONS.

THE ‘Edinburgh New Philosophical Journal’ for October 1863 contains “Some Observations on the Eggs of Birds,” from the pen of Dr. John Davy. These chiefly relate to the nature and properties of the colouring-matter, and to the results of certain experiments on the albumen. With regard to the former subject, Dr. Davy appears, generally, to have come to the same conclusion as Professor Wilke (‘Naumannia,’ 1858, p. 393) and M. Leconte (Rev. et Mag. de Zoologie, 1860, p. 199) have done, namely, that the colouring-matter “is not in any way owing to the presence of iron,” and consequently is not derived from the blood—an opinion contrary to that maintained, we believe, by M. O. DesMurs in his celebrated ‘Oologie Ornithologique.’

Dr. Davy plausibly suggests that the thickness of egg-shells bears a proportion to the weight of the parent bird, and to the time of incubation. This last point, however, is one on which we really have little authentic information, and we beg leave to suggest its consideration to some of our brethren who busy themselves only with British birds as a means of improving their "shining hours."

Sir Oswald Mosley's 'Natural History of Tutbury' (London, 1863) contains, amongst other ornithological notices by Mr. Edwin Brown, an account of the occurrence at Chellaston, near Derby, in May 1859, of a male example of the "Red-eyed Fly-catcher" (*Vireosylvia olivacea*) of North America. This is believed to be the first recorded instance of the occurrence of this bird as a straggler in Europe. A nicely executed coloured lithograph of the bird (drawn by Mr. Wolf) is given. Mr. Brown gives an extract from Mr. Gosse's notes on "this species" as occurring in Jamaica. This is rather unfortunate, as the Jamaican bird is, as is now well known to naturalists, a distinct species—the *Vireosylvia altiloqua* (Vieill.).

The 'Proceedings of the Natural History Society of Dublin'* contains frequent notices of the occurrence of rarer birds in Ireland, principally from the pen of Mr. Robert Warren, jun. Mr. Warren has paid much attention to the four species of Skua (*Stercorarius*) which occur on the Irish coast. Professor Kinahan, in some remarks on one of Mr. Warren's papers, conceives that the following conclusions have been established by Mr. Warren's observations upon these birds:—

1st. The Common Skua (*S. catarrhactes*) is a southern species, and a regular visitant in summer and autumn, following the shoals of mackerel and herrings into our bays, the British Isles being nearly its northern limit; the species breeding annually in the Orkneys, though not as yet known to breed in Ireland.
2nd. That the three other species, viz. Buffon's (or the Long-tailed) Skua, Richardson's Skua, and the Pomarine Skua, all occur as annual migrants—an annual migration of these

* 3 vols., and part 1. vol. iv. Dublin, 1864.





himself preparatory to a plunge,—presented a picture long to be remembered by us. A fine breeze sprung up soon after and carried us rapidly down the coast, and in the afternoon we began to leave Syd Cap behind us. The weather still continued beautiful; and it was not until about eleven o'clock on the night of the 8th that this wild and little-known land finally disappeared in the soft distance. The next morning we sighted Bear Island, about which we found the Fulmars again plentiful; and on the afternoon of the 11th made Ingœ, off the coast of Norway, about forty miles north of Hammerfest, where, after a tiresome delay, when almost within sight of the island whereon it stands, our vessel, the 'Anna,' came to anchor on the evening of the 13th.

Of the sixteen species of birds observed by us in Spitzbergen, there can be little doubt that, as we before said, the large Goose, which we believe to have been the Grey-lag, was the only one not noticed by Parry's expedition; for doubtless the Ptarmigan was by the members of it, as at first by us, thought to be only the common species. Twenty-one species, however, are included in J. C. Ross's list; and the six of them which did not occur to us are—Ringed Plover (*Charadrius hiaticula*), a single specimen only in Heela Cove; Fork-tailed Gull (*Larus sabini*), seen only in Waygatz Strait, and no specimen obtained; Cuneate-tailed Gull (*Larus rossii*), seen in Waygatz Strait, and on the ice as far north as the expedition went (lat. $82^{\circ} 45'$), but no specimen obtained; Pomarine Skua (*Lestris pomarinus*), one only seen in lat. 82° ; Red-throated Diver (*Colymbus glacialis*), no locality mentioned; and Razor-bill Auk (*Alca torda*). The last species may possibly have escaped our observation, but the Ringed Plover and Pomarine Skua must be regarded only as accidental stragglers; the two Gulls appear to be confined in summer to more northern latitudes than we reaehed, and the Red-throated Diver is probably but scantily dispersed in the interior, whieh we were unable to visit. We saw no birds of prey during the three weeks of our stay in Spitzbergen; nor could we hear from our crew, who were well acquainted with the coast—our pilot alone having made the voyage nineteen times—that any have ever been found there. We have no reason to believe that there is any

truth in the statement, that the Great Auk (*Alca impennis*, L.) has ever occurred so far to the north; but we have since learned that the Grey Phalarope (*Phalaropus fulicarius*, Bp.) has been obtained; and it is probable that the King Duck (*Somateria spectabilis*, Leach), the Long-tailed Duck (*Harelda glacialis*, Leach), the Great Northern Diver (*Colymbus glacialis*, L.), and, in small numbers, the Common Guillemot (*Uria troile*, Lath.) may sometimes be found in Spitzbergen. With these additions, the list of the birds we saw most likely comprises all the feathered denizens of this solitary land.

XIX.—*Five Months' Birds'-nesting in the Eastern Atlas.*

By OSBERT SALVIN, Corr. Memb. Zool. Soc. (Part I.)

(Plate VI.)

As Mr. Tristram has undertaken to furnish a complete account of the birds of Algeria, in which he will enter at length into a general description of the physical geography of that country, as exercising an influence on its ornithology, I merely in this article propose, as supplementary to Mr. Tristram's more systematic details, to give a short account of those birds which actually came under my own observation during the time I accompanied that gentleman and Mr. W. H. Simpson in their rambles through the Regency of Tunis and Eastern Algeria. The five months referred to above comprised part of February, March, April, May, June, and part of July in the year 1857; and though the first five or six weeks were not actually devoted to birds'-nesting, yet the time was spent in making inquiries about breeding-localities, and preparations for our journey; so that the whole period may be said to bear reference to the one object of the expedition.

The city of Tunis was our head-quarters while in the Regency, from which we made excursions to various parts, to Carthage and Oudena in the immediate vicinity, to Sousa and El Djem in the south, and to Bizerta in the north. None of these excursions were productive of much, ornithologically speaking. Those birds that were observed will be mentioned in the subjoined list. A month was spent in this way, after which we finally started

for Kef, the principal western frontier-town in the Tunisian territory, intending to cross by that road into the province of Constantine. Though the journey between Tunis and Kef can be performed without much difficulty in three days, we, preferring easy stages to more rapid travelling, passed six on the road. Our halting-places each successive night were Medjez el Bab, Testour, Teboursouk, Dugga and Bordj Messaoud. The afternoon of the sixth day brought us to Kef. Here, thanks to our letters from Tunis, we were most hospitably entertained by the governor, till our horses, tent-equipage, &c. had been forwarded to meet us from Sonk Harras, to which place Mr. Tristram had sent them on leaving the Desert to proceed to Tunis. Leaving Kef, and passing one night with the lawless frontier-tribe of Waregra, we reached Souk Harras, the most eastern military station in the French occupation. After spending a few days in reconnoitring, we pitched our tents on the 4th of April at the foot of the magnificent rocks of Djebel Dekma, our camp comprising, besides ourselves, three servants, three tents, four horses, with cooking-utensils and all the requisites for a nesting-campaign in the mountains. From Djebel Dekma we passed on to Khifan M'sakta, and from thence to Kef Laks, at which latter place we remained till the end of the month of April. The rocks and lofty precipices about Souk Harras, of which the above-mentioned form some of the principal, are the homes of the Lämmergeyer, Griffon and Egyptian Vultures, of the Golden, Tawny, and Short-toed Eagles, of the Barbary Falcon, the Common and Black Kites. The eye of any lover of ornithology would be delighted and astonished at the vast numbers of these magnificent birds of prey which all day long sail over his head, their numbers increasing in the vicinity of the rocks that hold their eyries. Many a time, when in that district I counted twenty and thirty, and on one occasion fifty-five Griffon Vultures on the wing at once, wheeling in circles and gradually extending their gyrations higher and higher till the uppermost birds were lost to sight or appeared as mere specks in the sky. Aïn Beïda, another military station which stands south-east of Constantine, in one of those elevated plains into which the Algerian Atlas expands itself, and which with their numberless

salt lakes form so marked a characteristic of the range, was our next resting-place, from which we gradually felt, as it were, our way westward to Djendeli. In this neighbourhood we passed the remainder of the month of May, our final camp, in June, being situated on the borders of a small marsh which lies to the westward of the high road between Constantine and Batna. On quitting this spot, we proceeded to Constantine, and thence to Philippeville, after having parted with our horses, tents, and every disposable thing. At Philippeville we took the coasting steamer to Algiers, and bid a final adieu to North Africa on the 11th of July.

The following observations are taken from notes made with reference to the specimens shot and the eggs collected during the expedition, and are given, with a few exceptions, nearly as I have them written.

1. *GYPÄËTUS BARBATUS.* (The Lämmergeyer.)

The first opportunity I had of observing this finest of birds was in the neighbourhood of Souk Harras in the first week in April. In a ramble in search of a spot for our encampment, we discovered an eyrie in one of the stupendous cliffs that characterize that district. It was quite inaccessible; and we had to bear our disappointment, as well as a good wetting, and return to the hotel (if the house where we put up may be designated by such a title) after an almost fruitless day. We were not then aware that the eggs of this species had long been hatched. On encamping at Djebel Dekma on the 4th of April, more frequent opportunities were afforded us of becoming acquainted with this bird. This mass of precipitous rocks is one of the most interesting and curious in the country. The strata form an angle of about 20° with the vertical, and, dipping towards the north, present a comparatively flat face with bushes and shrubs growing out of the interstices. The southern cliff is more broken and the strata much more horizontal. Towards the east these two parallel precipices dwindle to nothing, while westward they are abruptly terminated by another broken precipice which cuts the first two at right angles. In the centre of this group, and at its highest point, the whole mass is parted, leaving a rugged

gorge running north and south, having towering rocks on each side. The formation seemed to be almost entirely composed of nummulite. In this range a pair of Lämmergeyer had their eyrie in the western side of the gorge just above a cave that pierces the strata. To this nest one of our Arab servants, Mohamed, climbed and brought down a half-fledged young one, which, after living some few days, came to an untimely end *.

The range at Khifan M'sakta, our next camp, stretches south-west and north-east, and, though hardly on so grand a scale as Djebel Dekma, is somewhat similar in its peculiar isolation, the same feature of vertical strata presenting itself. A pair of Lämmergeyer also occupied these rocks, their nest being in a hole on the north-west side. At Kef Laks, in the precipices called by the Arabs "Gala cl Hamara," was another eyrie. None of the stories of the Lämmergeyer defending its young against one so hardy as to assail its nest were ever realized during our stay in their localities ; and though their eyries were repeatedly scaled and their young taken, the old birds not only never offered an attack, but in all cases either kept at a respectful distance, or never showed themselves at all. Immature birds of this species seldom occur in the breeding-haunts of the old ones : I only saw one during my whole stay. This remark probably applies to all the birds of prey ; and its truth is especially illustrated in the case of the Egyptian Vulture (*Neophron percnopterus*), immature birds of which I hardly ever saw. It would appear that this bird, like the *Gyps fulvus*, seldom, if ever, lays more than one egg : no instance of more than one young ever occurred in the nests visited. The food of the Lämmergeyer consists principally of the Land-tortoises (*Testudo mauritanica*), which abound throughout the country. These it carries to some height in the air, and lets fall on a stone to break the shell. It is an early breeder. The eggs must be laid in January, or the beginning of February at latest, as in the early part of April the young, in every case that came under our observation, had been hatched at least a month. I cannot concur in the supposition, suggested by the reviewer of Mr. Bree's "Birds of Europe," in the last Number of 'The Ibis,' "that the rich tawny hue of the under surface in

* This bird is now in the Norwich Museum.

some individuals of the Lämmergeyer is probably owing to a stain, the effect of bathing in muddy water, or of rolling in the sand with wet plumage." That such a cause should produce such an effect is not very obvious ; and even if it were so, one can hardly, by such a hypothesis, account for the colours being distributed *only* on the under surface and lighter portions of the plumage ; one would expect that the rolling process would extend some of its influence to the darker portions also. All the mature birds I saw wore a deep shade of this rich colouring. The young of this species, on first leaving the egg, is covered with down of a sooty-brown colour. A blood-red band which encircles the eye shows conspicuously when the bird is alarmed. The iris itself is in the first instance dark.

The Arabic name applied to the Lämmergeyer in Eastern Algeria is "*Boulachiah*."

2. GYPS FULVUS. (Griffon Vulture.)

I have, since my return, felt rather surprised that we never met with the Griffon Vulture in the Regency of Tunis : the rocks about Kef, from which the town takes its name, would appear admirably adapted for the nests of this bird. But none were seen ; nor was it till we reached Souk Harras that they first showed themselves, though I have since suspected that the greater part of a large number of birds of prey, observed soaring at a considerable distance near Sidi Yousef, on the Tunisian frontier, were of this species. At Djebel Dekma were several pairs, as also at Khifan M'sakta ; but Kef Laks and its neighbourhood seem to be their head-quarters. The term Kef Laks is strictly applied to a cliff which faces the east, and is a singularly bold and marked feature in the country. This eastern cliff forms one side of an elevated platform, the other sides being also precipitous rocks of no mean height. The northern of these is the most extensive ; and it was there that the greater part of the Griffon Vultures built their nests. These rocks are called "*Gala el Hamara*" and "*Kef Gh'tar*" by the Arabs. The former seemed a favourite locality ; and every available ledge was occupied. Facing this rock is a point which stands boldly out from the main cliff, to the extre-

mity of which I used often to climb to watch the proceedings opposite. One of these ledges is accessible to a good climber ; and Mohamed, our servant, who possessed hands, feet, and head which I have never seen surpassed for such dangerous exploits, performed the feat. A much-damaged egg, from which the young one had emerged, was the result ; all the other nests contained young. It is a fine sight to watch the ease with which the Griffon sails through the air : the apparently effortless extension of the wings seems amply sufficient to sustain its huge body ; no flapping motion is necessary to enable it to mount to a great height. It is only on leaving a rock that a few strokes are requisite to attain the necessary impulse, after which, with primaries bent upward by the force of the air, it performs its stately evolutions by soaring only. In alighting, the bird drops its legs some distance from the rock, and, sailing to within a few yards, it checks its velocity by two or three heavy strokes of the wing.

It has always been a mystery to me where so many Raptorial birds procure sufficient food. But few bleached skeletons are to be seen ; and on no occasion did I see a bird feeding. The old birds, though doubtless themselves capable of sustaining hunger for a long period, must traverse many miles of country to procure the more regular supply requisite for their young. In one instance only did we find an egg and a young one in the same nest ; in all other cases, one egg or one young one was the invariable number. The eggs appear to be laid in the month of February, as most of the nests contained young in the beginning of April. During the time of incubation, one of the parent birds sits constantly, and if frightened off, returns immediately. The nest is composed almost entirely of sticks, which are used in greater or less abundance, as the situation requires. The eggs obtained from wild birds generally show indications of natural colouring, in addition to the blood and dirt with which they are usually stained. This colouring is dispersed in faint spots of a reddish hue, sometimes all over the egg, but generally at the larger or smaller end. Of the four eggs in my collections, three exhibit traces of this marking. The eggs usually placed in collections are laid by birds kept in confinement ; and this

colouring is not observable. The young of the Griffon Vulture, on emerging from the egg, is covered with white down; the sides are dark. This bird is known among the Arabs as the "Nisser."

3. NEOPHRON PERCNOPTERUS. (Egyptian Vulture.)

Though at first sight this bird would appear to be hardly so numerous as the preceding species, yet its distribution is so much more extensive, that I am inclined to consider it as more abundant. It is to be seen usually in pairs; and wherever a cliff exists in the mountains that surround the table-lands of the Eastern Atlas, sure enough it will be occupied by a pair. It was about the 20th of March, when, riding from Tunis to Bizerta, I first saw this species, after which this bird and the Black Kite (*Milvus ater*) were our constant companions throughout our stay. Generally speaking, the nests of *N. percnopterus* are not so inaccessible as those of *Gyps fulvus*. One nest which I visited near Kef Laks, and from which an Arab had taken the egg and broken it, I could reach with my hand from a perfectly accessible ledge. This nest was in a crevice of the rock, and was composed entirely of small sticks.

The Arabs used to take the eggs of this bird for us whenever and wherever they found them, so that I am unable to speak with certainty of the average number laid by one bird; but I think that two is the usual complement. In some instances the bird would lay again in the nest from which her first egg had been abstracted. One nest at Khifan M'sakta contained three eggs. The Egyptian Vulture begins to lay about the 10th or 12th of April. I quite concur in Mr. E. C. Taylor's remarks (*Ibis*, No. 1, p. 42) respecting the irides and tarsi of the adult of this species; they agree with my own observations. The Arabs are well acquainted with this bird, and call it *Rachma*, the adult being distinguished as "*Rachma batha*," or White Rachma.

4. AQUILA CHRYSÆTUS. (Golden Eagle.)

The title of the Golden Eagle to be considered as the King of Birds is fully confirmed in the Atlas. Whatever rock a pair may choose for their eyrie, there they reign alone in dignified

solitude, nor do they allow a single Vulture, Kite, or indeed any other species of rapacious bird, to occupy with their nest a single spot in the same rock, however eligible for the purpose; nor are these other species ever to be seen in the haunts of their exclusive majesties. The whole southern precipice at Djebel Dekma was thus tenanted by a single pair of this Eagle, as also several other rocks that came under our notice. The eggs are laid in March, and are for the most part two in number, though, in some cases, no more than one occurred. The eggs taken in this district are many of them richly marked; but the spots appear to be more isolated than is observable in many Scotch specimens. Instances of the Golden Eagle building in trees were by no means of unfrequent occurrence.

The Arabic name of this bird is "*Hogarb kakala*," or "Black Eagle."

5. *Aquila nævia*. (Spotted Eagle.)

Owing to the great similarity that subsists between this bird and *A. nævioïdes*, I refrain from quoting doubtful instances of the occurrence of either. It was at Djebel Dekma only, that a pair were certainly recognized. These we used frequently to see flying round and about the northern cliff. I do not think that this is a species by any means numerous in the Eastern Atlas. We had a nestling Eagle for some time in our camp, which we used to suppose to be the young of this species; but I do not feel at all sure that such was the case. Unfortunately it was killed by an accident.

The Arabs apply the name of "*Hogarb*" to this and the following species.

6. *Aquila nævioïdes*. (Tawny Eagle.)

I several times had opportunities of observing a pair of these birds about a cliff which faces the south in the vicinity of Kef Laks. About the fourth week in April I discovered the nest, to which I sent Mohamed, but without result; the eggs had not been deposited. At Djendeli, in the Salt Lake district, I obtained a specimen. This bird, the skin of which I have still, seemed to have missed its moult, as the plumage was very much faded. So light-coloured is it, that it may bear comparison

with the figure of *Aquila belisarius* given in Levaillant's 'Exploration Scientifique d'Algérie,' which, there is no doubt, is referable to this species. A few of the darker feathers of the fresh moult just show themselves. On dissection, the sex was not to be traced. While staying at the same place, a young bird just beginning to change its down for feathers was brought to us. This we took from place to place, and eventually deposited in the Gardens of the Zoological Society of London, where it may now be seen.

7. *AQUILA BONELLI.* (Bonelli's Eagle.)

While staying at Sousa, in the Regency of Tunis, in February, an immature bird of this species was brought to me by an Arab, half-dead. We saw others in the Regency, where it appeared to be more numerous than further to the westward. In the Souk Harras district I did not meet with it, except on one occasion, when I found a decaying specimen laying on a heap of rubbish opposite the door of the hotel of that town. A pair frequent, and, according to an informant at Tunis, annually breed near the ruins of Utica; one of these birds I saw when visiting the site of that city.

8. *AQUILA PENNATA.* (Booted Eagle.)

On several occasions I observed a pair of these Eagles about the rock of "Gala el Hamara;" but though I kept a sharp look-out for the nest, I never could discover it. About Djebel Dekma I more than once saw the Booted Eagle; and indeed during our whole stay in the Souk Harras district, birds of this species were occasionally observed.

9. *CIRCAETUS GALLICUS.* (Short-toed Eagle.)

The first time I met with this species was just on entering the Arab village of Testour, between Tunis and Kef. One flew over my head, and, coming between me and the sun, threw a shadow which attracted my attention. I brought it down by a lucky shot without dismounting from my horse. A few days afterwards another was killed. The Short-toed Eagle was observed on many occasions in all the districts visited, but is perhaps more numerous about Souk Harras than elsewhere.

The first nest of this species we obtained was brought from Blad el Elma, a village to the south of Djebel Dekma; it contained two eggs, both which had been incubated some time, so that the long bare tarsi and large eyes of the embryo left little doubt as to the identity of the species. Of these eggs one had slight indications of colouring, a feature I have never observed in other specimens. The eggs are usually deposited in March; but some birds defer laying till April. The Arabs call this bird the "White Eagle"—"Hogarb abiad."

10. PANDION HALIAËTUS. (Osprey.)

In the lagoon of El Baheira, a number of posts are fixed to direct the boats that ply between Tunis and La Goletta. These are the favourite perches of several Ospreys, which during the winter months fish in the lagoon, and retire to these posts to feed on and digest their prey. While at Bona, I saw one bird flying along the sea-coast.

11. BUTEO TACHARDUS. *Buteo cirtensis*, Levaill., jun. (The African Buzzard.)

This species is by no means common in the district where other rapacious birds so abound. I have but few instances of its occurrence noted. One of these was at Khifan M'sakta, where a pair had their nest. On another occasion I saw two in a rocky pass near Ras el Alia. Subsequently Mr. Simpson shot one near the salt lake of Guerah el Tharf. The eggs, as might be expected, differ immaterially from those of the Common Buzzard (*Buteo vulgaris*).

12. MILVUS REGALIS. (Common Kite.)

For the most part, we found the nests of the Kite were much dispersed; I have no instance noted of more than a pair occupying one cliff. When in a rock, they were usually placed where a small tree or shrub grew out of a crack. Such was the case at Djebel Dekma, Khifan M'sakta, and Kef Laks, with a single exception. In this case the nest was in a hole in the precipice that forms the western termination of Djebel Dekma. The young in this nest were hatched in the first week in April. About the Ouled Zeid country, north of Souk Harras, the nests were usually in trees. Nearly all the eggs we obtained were

remarkably devoid of colouring. The Arabs call this bird "*Hadaya hamara*," or the "Red Hadayia."

13. *MILVUS ATER.* (Black Kite.)

During the breeding-season this species is much more abundant in the Souk Harras district than *M. regalis*. Indeed, with the single exception of the Kestrel (*Tinnunculus alaudarius*), it is the commonest rapacious bird in the Eastern Atlas. I never saw *M. aegyptiacus*. This latter appears to be a more southern species; and a very distinct line of demarcation might probably be drawn between the territories of these two near allies. Like the preceding, it selects for the position of its nest the roots of a shrub growing out of a rock, and builds a structure composed principally of sticks, with a lining of rags, wool, &c., while on the surrounding branches are fantastically hung old pieces of burnouses of various colours. I have also seen nests of the Common Kite decorated in this curious fashion. The Black Kite plays the part of scavenger in the districts where it abounds; and over every French settlement and Arab village several may be seen flying boldly round, on the look-out for any fragment of carrion that may be lying about. Its fearless and familiar manner and beautiful flight render this bird decidedly one of the most interesting in the country. The eggs are laid from the middle to the end of April, and are more distinctly and deeply marked than those of the other species. A series of the eggs of the two from the same district, placed side by side, present a marked contrast. This bird is known to the Arabs by the name "*Hadaya söda*"—the "Black Hadayia."

14. *ELANUS MELANOPTERUS.* (Black-shouldered Kite.)

On two occasions, among the Tamarisk trees, near where the Chemora empties itself into the Lake of Djendeli, I saw a bird which I had little hesitation in considering as of this species.

15. *FALCO BARBARUS.* (Barbary Falcon.) (Plate VI.)

There cannot be much doubt that the small Peregrine of the Atlas, the *Falco punicus* of General Levaillant, is in truth the "Barbary Falcon" of the old writers on Hawking, the foundation of the *F. barbarus* of Linnæus, Gmelin and Latham, though this latter name has generally been supposed to be a synonym

of *F. peregrinus*, auct. Messrs. F. H. Salvin and W. Brodrick, in their 'Falconry in the British Isles,' have given a good figure (plate xvii.) of an immatnre tiercel or male bird; and they justly remark (p. 101) that, "although smaller by nearly a fourth than the [true] Peregrine, it has the organs of destruction, such as the beak, feet, and talons, fully as large, united to longer and more pointed wings in proportion to its total length—in this respect almost rivalling the Hobby." The same authors quote from an old work, 'The Gentleman's Recreation' [1677], page 208, the following :—

"The Barbary or, as some call her, the Tartaret Faulcon, is a bird seldom found in any country, and is called a Passenger as well as the Haggard [*F. peregrinus*]. They are somewhat lesser than the Tiercel-gentle [*F. peregrinus*, ♂], and plumed red under the wings, strong-armed, with long talons and stretchers.

"The Barbary Faulcon is ventuously bold, and you may fly her with the Haggard all May and June. They are Hawks very slack in mewing at first; but when once they begin, they mew their feathers very fast.

"They are called Barbary Faulcons because they make their passage through that country and Tunis, where they are more frequently taken than in any other place, namely in the Isles of the Levant, Candy, Cyprus, and Rhodes."

Messrs. Salvin and Brodrick go on to observe, of the subject of their plate, "The specimen in our possession is that of a young male, and was killed by an acquaintance in the country from whieh it takes its name. Its length is under 13 inches from the beak to the end of the tail; length of wing from shoulder to tip 11 inches, with the bill, legs, and feet equal in size to those of the male Peregrine. The young female is scarcely to be distinguished from the young male Peregrine, except by the greater development of these organs of destruction, which equal those of the Falcon. The cere in the young bird is blue, and the legs yellow,—similar in this respect also to the Peregrine."

It may be that M. Temminck's description of his *Falco peregrinoïdes* (Pl. Col. livr. 81) was taken from one of these birds; if so, he has confounded this species with the real *F. peregrinoïdes* of Sir Andrew Smith—a South African form,—as well as with

the true *F. lanarius* of Dr. Schlegel, an adult male of which the figure (Pl. Col. 479) very much resembles.

It is probable that the geographical range of this beautiful miniature Peregrine is extremely limited ; the Atlas, however, appears to be its focus. In the Museum at Norwich is an immature specimen, said to come from Western Africa, where, however, if it occurs, it is most likely only as a straggler. Mr. J. H. Gurney has had three living birds of this species, all nestlings brought from Algeria,—two by Mr. Tristram, in 1856, and one by Mr. Simpson and myself, in 1857. One of them made its escape last autumn ; but the other two are still at Catton, and seem to be in good health. They all three, as is usual with the true Falcons, moulted into the adult plumage when about fifteen months old. Of European localities for this bird, it would seem, from the concluding sentence in the extract above given from the ' Gentleman's Recreation,' that it has been taken in Crete, as well as in the Asiatic islands of Cyprus and Rhodes*. It is very possible that it may not be uncommon in Spain, especially the interior of the country ; and it is pretty sure to occur accidentally at Gibraltar, where a good look-out should be kept for it. Its small stature, powerful feet and claws, and its ruddy under-plumage, will prevent its being taken for the common Peregrine by any one to whom these peculiarities are known.

The rediscovery, if it may be so called, of this bird, is another most interesting proof of the extreme accuracy of the old writers on Falconry ; of which the determination of the true Lanner (*F. lanarius*, Schl.), and the separation from it and other allied species of the Saker (*F. sacer*, Schl.), are notable instances. In these two latter cases the judgment of Dr. Schlegel is not likely to be

* The late Mr. W. B. Barker, in his work on Cilicia, says that the Peregrine of Mount Taurus is known as the "Barbary Falcon" ("Lares and Penates," p. 297). Now if, as the old writer above quoted says, it is really found in Rhodes and Cyprus, this may be the case ; but, at the same time, it is perhaps more probable that the bird mentioned by Mr. Barker is the true Lanner (*F. lanarius*, Schl.), of the existence of which he does not seem to have been aware, since the species he calls the Lanner is the Saker (*F. sacer*, Gm.), as was proved by a living bird he presented to the Zoological Society.

reversed; and the distinctness of the Barbary Falcon from the Peregrine, which has long been and still is a tradition among falconers, will probably be as much confirmed by future researches as that opinion.

My own experience of this bird was entirely confined to the Eastern Atlas, where in some districts it is by no means uncommon. I had many opportunities of watching the birds, and was present at the siege of three of their eyries, besides discovering others which were inaccessible. The first of these nests was in a hole in the eastern portion of the rock of Djebel Dekma. To this nest, for a long time Mohamed obstinately refused to ascend; it was his first experience in rope-climbing. Two dollars, however, produced the desired effect; and after five hours' hard work, during which we had to employ every available foot of cord, even to our tent-lines, we were rewarded with three eggs. While the siege was going on, I shot one of the old birds. A few feet from the nest of the Lämmergeyer in Khifan M'sakta was another nest. From this we took on the 9th of April four eggs just ready to hatch. The parent birds I watched for some time as they flew anxiously round, but did not shoot one. On the 20th of April an Arab reported that he had found a nest of "*Bournee*" in Kef Boudjato, a roek situated no great distance from Kef Laks. I immediately started to the spot, taking with me Mohamed, my gun, and ropes. A successful siege was the result; and I returned to the tents with three eggs and one of the parent birds. The measurement of an egg from each of these three nests I subjoin. The Barbary Falcon brought to England by us (mentioned above as now in Mr. Gurney's possession) was procured from a rock near the Marabout of Sidi Khalifa Cherif, on the northern boundary of the extensive plain that holds the salt lake of Guerah El Tharf. Bil Ghazoum, our interpreter, and Mohamed, our climber, took it and another from the same nest about the 8th of May. They had then almost assumed their feathers. Between these two birds there subsisted a marked difference in size; and the smaller of the two had, in addition to the rufous marking at the back of the neck, a light-coloured reddish head. We kept them about two months, during which time they came to their

full feather, the same inequality in size subsisting between the two. They were, doubtless, male and female. Unfortunately the male died during the journey between Marseilles and Paris, and we had no means at hand for preserving it. The female is now at Catton. From this female it would appear that all Mr. Gurney's birds were females, as all corresponded in size; and I am also led to the conclusion that the two skins I possess, from one of which the accompanying figure is taken, are also females, as Mr. Gurney kindly compared them with his living examples, and in point of size they presented no appreciable difference. I mention this, as my two skins are marked male and female; but I was evidently mistaken in one or other, as both are as nearly as possible the same size, or, if anything, the one marked male is the larger of the two. From the stomach of both these specimens I took examples of a large species of *Entozoon*, but unfortunately did not preserve them. I am indebted to Mr. Alfred Newton for the quotations which I have given above respecting this bird, and also for the probable references which I subjoin:—

Accipiter falco tunetanus, *Briss. Orn.* i. p. 343 (1763).

Falco barbarus, *Linn. Syst. Nat.* p. 125 (1766).—*Gmel. Syst. Nat.* p. 272 (1789).—*Lath. Ind. Orn.* p. 33 (1790); *Syn. i.* p. 72 (1781); *Gen. Hist. B. i.* p. 82 B (1829).

Faleo alphanet, *Schl. Tr. sur la Fauconnerie*.

Faleo punieus, *Levaill. jun.*, *Exploration Scientifique d'Algérie*.

Gennaja barbarus, *Bonap. Cat. Ois. d'Eur. et de l'Alg.* (1856).

Barbary Fauleon, *Gentl. Recr.* p. 208 (1677).

Barbary Falcon, *Albin, Nat. Hist. B. iii.* pl. 2 (1738).—

F. H. Salvin and Brodrick, Falconry, p. 101, pl. 17.
(Av. hornot.)

The Barbary Falcon is well known to the Arabs as "*Bournee*."

The measurements of the eggs referred to above are:

- | | | | | |
|------|----------|-----------------|--------------|------------------|
| (1.) | Axis . . | 1 in. 11 lines. | Diameter . . | 1 in. 7·5 lines. |
| (2.) | " . . | 1 " 10·5 " | " . . | 1 " 6 " |
| (3.) | " . . | 2 " 0·5 " | " . . | 1 " 6·75 " |

In point of colouring they appear subject to the same varieties as the Common Peregrine (*Falco peregrinus*).

The measurements of my two skins are, in inches and decimals:

(1.) Whole length 13·0; wing 11·25; tail 5·75; tarsus 1·60; bill from gape 0·95.

(2.) Whole length 13·5; wing 11·0; tail 5·0; tarsus 1·7; bill from gape 1·0.

From this last bird Mr. Wolf's drawing is taken.

16. HYPOTRIORCHIS ELEONORÆ. (Elconora's Falcon.)

On two successive mornings I had the gratification of observing this species. We were encamped on the banks of the Chemora, on the south side of the hills that skirt the southern shore of Lake Djendeli. On the 27th of May I had been out to collect specimens of the Alpine Swift (*Cypselus melba*), many of which I had seen flying over the plain, and was returning to breakfast, when one of four hawks which I had previously been watching with some curiosity (not knowing what they were) came over my head, and fell to a discharge of dust-shot. It proved to be a splendid female of *H. eleonoræ*, in full adult dress. The following morning I saw one about the same spot, but failed to get a shot. It would appear that this bird is a late breeder, as the eggs in the ovary were not at all forward, and the perfect state of the feathers showed that no eggs had been incubated. The plumage of this specimen retained, for some time, a peculiar smell, possibly owing to the nature of its food, which, though I neglected to examine at the time, I conjecture to have consisted principally of *Coleoptera*. Of the colouring of the fleshy parts of this specimen I have the following note:—Bill blue at the base, black at the tip; cere yellowish-blue; legs yellow; claws black; eyelid yellow; irides dark brown.

The Zoological Gardens at Marseilles, when I visited them in July 1857, contained three birds marked *F. eleonoræ*. They were in the Hobby plumage, and apparently nestlings that had just assumed their feathers.

17. TINNUNCULUS ALAUDARIUS. (Common Kestrel.)

The Kestrel is very abundant throughout the Eastern Atlas,

breeding in cliffs and Roman remains of sufficient height. When I visited El Djem, in the Regency of Tunis, in February, I found the ruined amphitheatre tenanted by about twenty pairs. They are said to reside and to build their nests in the most inaccessible ledges of the structure. This amphitheatre is perhaps one of the finest Roman remains in the country, but is, I fear, destined to last no lengthened period; for, besides the ravages of time, the ruthless Arabs daily hasten its downfall by pulling out the stones, to employ them in the construction of their miserable hovels. Strange to say, we never obtained a single egg of this species.

18. *CIRCUS AERUGINOSUS.* (Marsh Harrier.)

About the middle of May a violent hailstorm passed over us while we were encamped at Aïn Djendeli. The hailstones were of such a size, that the trees were stripped of their foliage, and many birds, even ducks, were killed. The day following, a Marsh Harrier, half-dead, was brought to our tents by an Arab, having, doubtless, been reduced to that state by exposure to the fury of the storm. It rallied a little on being taken into the tent, but died shortly afterwards. I have no other instance noted of our having met with this bird.

19. *ATHENE NUMIDA.* *Strix numida*, Levaillant, Exploration Scientifique d'Algérie, Ois. pl. 4. (Algerian Little Owl.)

This close ally of the Little Owl (*A. noctua*), if, indeed, it is really distinct, we found generally distributed, but nowhere abundant in the districts visited. While staying at Djendeli, we obtained, towards the end of May, two nests, from off the eggs of one of which the bird had been caught. In the olive-groves about Tunis, this bird may frequently be met with. In this neighbourhood also it is said to breed, choosing for the position of its nest the wells and old Roman eisterns which so abound throughout the district.

20. *SCOPS ZORCA.* (Scops-eared Owl.)

In the Djendeli district we found this Owl abundant; every night its peculiar cry might be heard from one or more individuals. Several birds were brought to us by the Arabs, which had been caught on their nests. One of these, whose wing had

been injured, we kept for some days in the tents ; but after a time it disappeared, having probably hopped off in the night. Many of the Arabs are very skilful in catching birds ; Larks (*Alauda*), Owls (*Athene* and *Scops*), Rollers (*Coracias*), and now and then a Little Bustard (*Otis tetrax*) were brought to us. I am not aware that they employ other means than the burnous in effecting their object. This they hold extended with both hands, when, after having kicked their shoes off, that they may tread more quietly, they endeavour to envelope bird, nest, and eggs in the universal garment. The cry of the Scops-eared Owl is admirably expressed by the Arabic name “*Marouf.*”

[To be continued.]

XX.—*On the Breeding of the Crane (Grus cinerea) in Lapland.*
By JOHN WOLLEY, jun.

In common with, I believe, most people interested in such matters, I was long entirely in ignorance as to the condition in which the young Crane (*Grus cinerea*) would be found on first leaving the egg, whether helpless like a young heron, or able to run about like the young of most waders and of gallinaceous birds. The late Prince Charles Bonaparte had inclined to think they would long continue nestlings ; Mr. Gould, as he assured me, had always opposed the probability of this opinion.

It was on the 15th June, 1853, that I entered the marsh which the well-known Pastor Læstadius had told me was the most northern limit in Lapland of the breeding of the Crane. It is in Swedish territory, being on the west side of the frontier river, opposite the Finnish (Russian) village of Yli Muonioniska, in about lat. 68° , that is, some distance within the Arctic Circle. This great marsh, called “*Iso uoma,*” is mostly composed of soft bog, in which, unless where the Bog-bean grows, one generally sinks up to the knees, or even to the middle ; but it is intersected by long strips of firmer bog-earth, slightly raised above the general level, and bearing creeping shrubs, principally of sallow and dwarf birch, mixed in places with *Ledum palustre*, *Vaccinium uliginosum*, *Andromeda polifolia*, *Rubus chamæmorus*, besides grasses, carices, mosses, and other plants. There were

also a few bushes or treelets of the common birch, and these quite numerous in some parts of the marsh.

Walking along one of these strips, in a direction where the pair of Cranes was said to be often heard, I came upon a nest which I was sure must be a Crane's. I saw one bit of down. The nest was made of very small twigs mixed with long sedgy grass; altogether several inches in depth, and perhaps two feet across. In it were two lining-membranes of eggs, and on searching amongst the materials of the nest I found fragments of the shells. We had not gone many yards beyond this place, when I saw a Crane stalking in a direction across us amongst some small birch trees, now appearing to stoop a little, and now holding its head and neck boldly up as it steadily advanced. Presently the lads called out to me that they had found some young Cranes. As I ran towards them, a Crane, not the one I had previously seen, rose just before me from among some bushes which were only two or three feet high, and not twenty yards from the place where the lads had been shouting at least for a minute or two. It rose into the air in a hurried, frightened way. There was nothing just at the spot where it got up, neither eggs nor young. I then went up to where the two little Cranes were found. They were standing upright and walking about with some facility, and making a rather loud "cheep-ing" cry. They seemed as if they could have left such eggs as Cranes were supposed to lay only a very few days. I say *supposed*, for in England we know nothing of the eggs which are called Cranes', but which may have come from any part of the world. They were straightly made little things, short in the beak, livid in the eye, thick in the knees, covered with a moderately long chestnut or tawny-coloured down, darker on the upper parts, softening away into paler underneath. As I fondled one of them it began to peck playfully at my hands and legs, and when at length I rose to go away, it walked after me, taking me as I supposed for one of its long-legged parents. I had only just before been plucking from it some bits of down to keep; for, valuable as I knew it to be in a natural-history point of view, I could not make up my mind to take its life. As soon as I saw its inclination to follow, I took to double-quick time,

sand, and when alarmed continuing its flight to a considerable distance. It was obtained in the dreary desert between Gue-nara and Hadjira, and also in the Chotts near Tuggurt. It breeds in burrows.

42. **SAXICOLA HALOPHILA**, Tristram, Ibis, 1859, p. 59. (The Salt-loving Chat.)

Like the preceding in its habits and localities, but apparently occurring only in the eastern and Tunisian portions of the Sahara. The general tone of plumage somewhat resembles that of *S. philothamna*, to which in its perching and burrowing habits it bears affinities. There is a peculiar silky texture in its loose plumage, which I have not observed in other Chats. It is shorter, but more robust than the *S. stapa-zina*, and wants the dark back, throat, and shoulders of *S. philothamna*. Its inconspicuous cinnamon head and back render it very difficult to detect, either on the ground or perched on a tuft of Desert-rush. On the first occasion on which I met with it, the chase cost me an hour's pursuit before I could get within shot, the little fellow keeping quietly but constantly about a hundred yards ahead. There is very little difference between the sexes in plumage, the female being without the dark cheeks, and rather fainter in general coloration.

43. **SAXICOLA HOMOCHROA**, Tristram, Ibis, 1859, p. 59. (Solitary Chat.)

The smallest and most inconspicuous of its class, exiled to a region where none others exist. In the restless sand-drifts of the Desert of Souf, and the 'Dunes de sable' which roll and rise beyond the Tunisian Djereed, is the home of this solitary and melancholy bird. While toiling through this weary Sand-ocean in a three-days' journey, this and *Galerida arenicola* were the only living things that crossed our path. With the exception of its dark-brown primaries and rectrices and dull-white tail-coverts, it is of a uniform pale sand-colour. The sexes are identical in plumage. It sits at the edge of a sand-drift, and as the shelving sides crumble down with the wind, it seems to search for its food in the debris.

XXX.—*Five Months' Birds'-nesting in the Eastern Atlas.* By
OSBERT SALVIN, B.A., CORR. MEMB. ZOOL. SOC. (PART II.)

[Continued from p. 191.]

21. *CAPRIMULGUS EUROPAEUS.* (Goatsucker.)

While we were encamped at Kef Laks, an Arab brought to the tents a Goatsucker, half-dead. This was the only occasion on which I met with this bird.

22. *CYPSELUS APUS.* (Swift.)

On the 8th of March, I saw a single bird of this species flying over the city of Tunis. I did not observe it again until reaching Algiers, where it occurred in plenty.

23. *CYPSELUS MELBA.* (Alpine Swift.)

This species is more commonly seen about the plains of the Salt Lake district than in the more mountainous parts of the country, though in the latter it is by no means of unfrequent occurrence. At Kef Laks I was vain enough to attempt to shoot some specimens on a windy day; though they frequently came within shot, their pace was so great, that I totally failed in my object, and only succeeded in firing my gun two or three times. The Alpine Swift breeds in most of the rocks of the country; but we did not procure any of its eggs.

24. *HIRUNDO RUSTICA.* (Swallow.)

I found several pairs of these birds at the caravanseray of Aïn Yacoute, on the road between Constantine and Batna, where they had their nests among the rafters of an open shed.

25. *CHELIDON URBICA.* (Martin.)

In the first week of March I saw several Martins at Sousa, and others subsequently at Tunis.

26. *COTYLE RIPARIA.* (Sand Martin.)

On one or two occasions, I observed birds of this species on the road between Tunis and Kef during the third week in March. I never saw others subsequently.

27. *CORACIAS GARRULA.* (Roller.)

About the wooded hills that skirt the elevated plains of the Eastern Atlas, the Roller may not unfrequently be met with.

In these districts it breeds in the month of May, choosing for the position of its nest a hollow in a tree, and usually preferring one that has a side entrance. In this the eggs are deposited on no softer nest than that which the chips of dead wood at the bottom afford. The Arabs used frequently to catch the birds in their holes and bring them, eggs and all, to us. Their local name is "*Shrugwrug*," derived from one of the cries of the bird, which it well expresses.

28. MEROPS APIASTER. (Bee-Eater.)

The first time I observed this species was towards the end of April, at Kef Laks, where a flock, apparently just arrived, passed over my head. It is plentiful about Djendeli, and breeds, boring the hole for its nest, in banks of the river Chemera and the ditches that drain the low land near the lake. There the soil is alluvial and soft, and the bird finds little difficulty in making its excavation. During our stay, I took several nests, and latterly became an adept at knowing at once which holes were tenanted, and where and when to dig. A little circumspection is necessary at first; for not unfrequently the occupant of the hole is not a Bee-eater, but a toad or snake. The scratchings made by the bird's feet in passing in and out, and the absence of fresh earth beneath the orifice are generally sure indications of the excavation having been completed, and consequently of a strong probability that there are eggs within. The holes pierced by this bird usually consist of a horizontal passage about three or four feet long, the entrance being at various heights from the level ground. This passage, from a circular opening, is gradually enlarged horizontally till it arrives at a chamber of about a foot in diameter, and domed over. In this chamber the eggs are frequently deposited. Should, however, none be found, it is necessary to feel all round the chamber; and in many instances another passage of about a foot long will be found communicating with a second chamber in all respects similar to the first, in which, if it exist, the eggs are placed. The bird makes no nest; but the floor of the chamber is strewn with the legs and wing-cases of *Coleoptera* in such abundance that a handful may be taken up at once. In most instances, I caught one of the old

birds in the chamber containing the eggs ; while the hole was being enlarged, it would, every now and then, attempt to escape. The eggs are laid early in June, and are usually six in number. The flight of the Bee-eater is somewhat like that of a Swallow (*Hirundo rustica*), though its movements are much slower ; and it is frequently to be seen perched on a bush. Its cry is harsh and monotonous.

29. UPUPA EPOPS. (Hoopoe.)

The Hoopoe was abundant about Djendeli when we were there. In every direction in the wooded hills of this district, the cry from which the bird takes its trivial name might be heard ; but, common as it was, we never obtained a single egg.

30. CALAMODYTA LOCUSTELLA. (Grasshopper-Warbler.)

Every night while we were encamped near the Marabout of Sidi Khalifa Cherif, I used to hear the peculiar cry of a member of this genus. On one occasion I saw, at the same place, a bird which I considered at the time to have been a Grasshopper-Warbler. The place appeared ill-adapted for this fen-loving bird, being dry and sterile ; but from the fact of its being found in England in fens, woods, and moors indiscriminately, it would seem that the cover afforded by the sedge, rather than the moisture of the situation, is what is sought for by the bird.

31. CALAMODYTA LUSCINOÏDES. (Savi's Warbler.)

I found this bird abundant in the marsh of Zana. On approaching the margin of the reeds, its peculiar rattling note might be heard in every direction. The bird, when uttering this cry, climbs to the very top of a reed, often choosing the tallest, where it sits, if not disturbed, for several minutes, without changing its position. When singing, the head is moved slowly from side to side, by which means it may be that the ventriloquism ascribed to the Grasshopper-Warbler is produced, —the apparent change of position of the bird being, in fact, a change in the direction in which the sound of its voice is thrown. On taking alarm, the songster drops instantly into the thickest sedge, when pursuit is hopeless, as it carefully eludes observation, never showing itself in open flight ; sometimes, however,

its course may be traced by the shaking of the reeds as it springs from one to another. The peculiar nest of this species—a beautifully-compact structure composed entirely of dead flag—is artfully concealed in the thickest parts; and at Zana it can only be found by wading in mud and water up to the middle, and even then it is quite a chance to find one. The eggs from this locality are decidedly smaller than English and Dutch specimens.

32. *CALAMODYTA CETTII.* (Cetti's Warbler.)

On one or two occasions, among the tamarisk-trees on the banks of the Chemora, I caught a momentary glimpse of a bird of this species—not more than was sufficient to recognize it. It appears to be shy, and not common in the Eastern Atlas.

33. *CALAMODYTA AQUATICA.* (Aquatic Warbler.)

At the head of the little marsh of Ain Djendeli I more than once observed a pair of this Warbler. We afterwards found it more abundant at Zana, where it was breeding. In its habits it much resembles the common Reed Warbler (*C. arundinacea*) ; the eggs also are similar.

34. *CALAMOHERPE TURDOIDES.* (Thrush-like Warbler.)

The commonest species of the *Sylviinae* in the marsh of Zana, where its incessant note, day and night, assails one's ears. It breeds abundantly amongst the taller reeds.

35. *PYROPHTHALMA MELANOCEPHALA.* (Sardinian Warbler.)

This is one of the most striking of the smaller species in North Africa. About Tunis and elsewhere in the Regency it is common, and extends along the ridge of the Atlas to Souk Harras, where we lost sight of it on entering the less wooded and more sterile portions of the mountain chain.

36. *SYLVIA CINEREA.* (Whitethroat.)

Observed during the first week in April between the foot of the rock of Djebel Dekma and the river Medjerda.

37. *SYLVIA CONSPICILLATA.* (Spectacled Warbler.)

A true inhabitant of the Salt Lake districts, where it is found abundantly, frequenting the low shrubs that cover the uncultivated portions of that region. It is a shy and wary bird, and

carefully eludes observation by skulking from bush to bush as one approaches. In the above-mentioned shrubs it builds its nest, making a loose but neat structure of dry grass with a scanty lining of horsehair. The eggs in one nest seldom exceed four. The Arabic name is "*M'zizzee.*"

38. **SYLVIA ORPHEA.** (Orphean Warbler.)

This is a tolerably common bird about the wooded hill-sides of Djendeli, where it usually breeds, though we sometimes obtained nests from the tamarisk-trees in the plain. Its nest much resembles that of the common Blackcap (*S. atricapilla*), but differs in being more compact and thicker; the position in the branch of the tree selected is usually similar. The note of this bird is pleasing, but hardly so much so as to entitle it to the name of the Orphean Warbler.

39. **HIPPOLAIIS POLYGLOTTA.** (Latham's Pettychaps.)

A very common bird about the Chemora, where we found it breeding in the tamarisk-trees.

40. **PHYLLOSCOPUS RUFUS.** (Chiff-chaff.)

This was the first bird I heard on landing at Philippeville before proceeding to Tunis. It appears to winter in Algeria. I obtained specimens near El Djem in March.

41. **PHYLLOSCOPUS TROCHILUS.** (Willow Wren.)

During the month of March I shot more than one of this species in the Regeney of Tunis.

42. **PHYLLOSCOPUS SIBILATRIX.** (Wood Wren.)

I shot a single specimen of this bird (the only one I saw) in May, near where the Chemora empties itself into Lake Djendeli.

43. **SAXICOLA GENANTHE.** (Wheatear.)

A specimen of this bird was shot near Zana in June.

44. **SAXICOLA LEUCURA.** (Black Wheatear.)

More abundant about the Djendeli district than elsewhere. It appears to be an earlier breeder than other *Saxicolæ*, as young were found at the end of May in an advanced stage.

45. *SAXICOLA AURITA*. (Eared Wheatear.)

The favourite resort of this species is among the stony ground at the foot of the hills ; and in such places it may be looked for, and generally found. Roman ruins also are much frequented. We obtained two nests from the Madracen, where they were placed in the interstices of the stone of that building. Usually the nests were close by, or under a large fragment of rock.

46. *SAXICOLA STAPAZINA*. (Russet Wheatcar.)

Is found in similar situations to those of the last, and appears equally distributed over the same districts. No difference is noticeable between the eggs of this and the former species. The Arabic name for all the Wheatears is “*Millil*.”

47. *PRATINCOLA RUBICOLA*. (The Stonechat.)

By no means uncommon in the mountainous districts.

48. *SAXICOLA RUBETRA*. (The Whinchat.)

Also common in localities similar to the last.

49. *RUTICILLA MOUSSIERI*. (Moussier's Redstart.)

This species, which is peculiar to North Africa, is perhaps one of the most interesting in the Regency of Tunis and Eastern Algeria, where I had the pleasure of observing it. Its favourite resorts are the ruins of the old Roman cities which lie scattered in all directions throughout this district, and the loose rocky ground which skirts the plains at the foot of the surrounding hills. When visiting such spots, the bright plumage of the male, as he glides from stone to stone, is one of the first objects that attract the attention. The note uttered by the male during the breeding-season is peculiar ; and, unlike that of any of its congeners, it is monotonous, but not unpleasing. This bird seems intermediate between the Stonechats and Redstarts ; but I am inclined to consider that it is more closely allied to the former than to the latter : the character of the plumage of the male would lead one to this supposition ; and its habits, actions, and nest tend rather to confirm the idea. The eggs, which are white with the faintest tinge of greenish-blue, only indicate its connexion with the whole group, including the Wheatears ; and, as in the case of the eggs of *Saxicola oenanthe*, I have no doubt that spotted varieties occur. On observing the eggs of the

Saxicolæ and *Ruticillæ* mentioned in this paper, an intimate relationship can be traced between the whole. In the first instance, take the richly-coloured and highly-marked eggs of *S. leucura*, *S. aurita*, and *S. stapazina*, all of which are greenish-blue, with decided spots of red-brown; next to them I would place those of *S. rubetra*, which are similarly marked, but not so deeply; then those of *S. rubicola*, which also are spotted, but more indistinctly; next follow the pale, delicately coloured eggs of *S. œnanthe*, in which a tendency to spotted varieties is not unfrequently noticeable; then come the eggs of *R. phœnicura*, among which spotted varieties occur, but not so commonly as in the preceding. Those of *R. moussieri*, with their just traceable colouring, follow next in succession; and lastly, those of *R. tithys*, which, though white, and differing widely from the well-marked eggs of *S. leucura*, can still be connected with the series through the medium of *S. œnanthe* and *R. moussieri*.

The Arabic name for this bird is "Zinzuck."

50. RUTICILLA PHœNICURA. (Redstart.)

I met with this species near El Djem, in the south of the Regency of Tunis, at the end of February.

51. RUTICILLA TITHYS. (Black Redstart.)

Not an uncommon bird near Tunis and many of the villages of the Regency; but it would appear to be more rare in the mountainous districts, as I have no note entered of having observed it.

52. ERYTHACUS RUBECULA. (Robin Red-breast.)

I shot a Robin near Sousa in the beginning of March. I never saw another during my whole stay.

53. PHIOMELA LUSCINIA. (Nightingale.)

I observed Nightingales in a wooded ravine near Khifan M'sakta, in the early part of April. In the Salt Lake districts it does not seem to occur.

54. AËDON GALACTOTES. (Rufous Scdge Warbler.)

The head-quarters of this bird seem situated in the Salt Lake districts, where we found it abundantly through the months of May and June. It does not appear that marshy ground is an

indispensable requisite to their haunts ; for I observed it not unfrequently in the arid district of Guerah el Tharf. In the map, this lake looks a magnificent piece of water ; but it is in reality what most of the places similarly laid down are, viz. a wide expanse of sand covered with saline incrustation, which only in peculiarly wet seasons is flooded with water. There nearly always exists in most of these sandy plains a great amount of evaporation, which, with the white saline matter on the surface, at a distance of a few milcs gives all the appearance of a turbulent lake. Indeed, so perfect is the deception, that on arriving at Aïn Beïda, we supposed that, when looking on Guerah el Tharf, we had in view a magnificent lake ; and so we continued to believe it, till a morning's ride destroyed the illusion. Subsequently I saw many other instances of mirage, in some of which the hills, clouds, and all the surrounding objects were perfectly reflected. Near Aïn Djendcli, I used frequently to notice the present species about the trees that overhang the dry stony water-courses that run from the hills into the plain beneath. We never found a nest, however, in one of the above-mentioned places ; and it would seem that the bird prefers a moister soil for its breeding-haunts, such as is afforded by the lowlands near lake Djendeli, where the Tamarisk-treces grow on the banks of the Chemora and the small Aïn or spring. The nest we found usually placed conspicuously in the fork or on a branch of one of these treces, and with apparently no attempt at concealment. The heights at which the structure is placed vary from one to six feet from the ground. In one instance I found a nest among the roots of a tree in a bank-side, in a place where one would have expected in England to have found the nest of a Robin. The materials employed are the dead shoots of the Tamarisk, which form the outside,—the inside and lining being usually coot's or duck's feathers, mingled with wool or camel's hair ; and in nine cases out of ten, a small piece of serpent's skin is loosely placed in the bottom of the nest*.

The number of eggs varies from three to five. They are laid about the third week in May.

* I have since observed other instances of serpent's skin similarly used. As to what object the bird has in view in employing such material, I can form no conjecture.

In its habits this bird is shy, and is careful to elude observation. When it alights on a twig, it expands its tail, and shows the peculiar markings which terminate each feather. While holding it thus extended, it raises it once or twice, somewhat after the manner of *Copsychus macrurus*, a bird which must be familiar to all who are acquainted with the New Aviary in the Gardens of the Zoological Society. I may here remark that the eggs of *Aëdon galactodes* are not to be distinguished from those of *Anthus rufescens*, a bird equally or perhaps more common in the same districts in the Atlas: so that eggs ascribed to this species from that country, without undenial proof that they are what they profess to be, can only be received with great doubt, and are in fact valueless to a collection. Among the Arabs of Djendeli this bird is known as "El Hamara"—"the Red Bird."

55. PARUS ULTRAMARINUS. (Ultramarine Titmouse.)

This highly-coloured representative of our common Bluetit (*Parus cæruleus*) is abundant in all the wooded districts. In the mountains it may not unfrequently be observed about the shrubby vegetation which clothes many of the precipices. In its habits, as might be expected, it much resembles our familiar species. I never saw *P. ledouci*, nor have I any note respecting *P. major*, which latter species is said to be common.

56. BUDYTES FLAVA. (Grey-headed Yellow Wagtail.)

This Wagtail I observed at Kef Laks, apparently on passage. It afterwards occurred in plenty at Zana and Aïn Djendeli. It appears local in its distribution, but common where it is found.

57. MOTACILLA ALBA. (White Wagtail.)

Common about Tunis in February, but not afterwards observed.

58. ANTHUS PRATENSIS. (Meadow Pipit.)

I shot one specimen of this bird at Kef Laks in April.

59. ANTHUS RUFESCENS. (Tawny Pipit.)

Towards the end of April I first observed this Pipit, when I collected some specimens on the plateau of Kef Laks. We afterwards found it abundant about the plains of Djendeli, from

which district we obtained its eggs. These vary much, some being light-coloured and almost like Wagtails', while others are much darker and more profusely marked. The nest is composed of roots, with a lining of horsehair, and is placed on the lee side of a bush, the prevailing wind being from the north-west.

60. *TURDUS VISCIATORUS.* (Mistletoe Thrush.)

On passing through the Waregra country, near the Tunisian frontier, I shot several of these birds, and saw others.

61. *TURDUS MERULA.* (Blackbird.)

The Blackbird is common in the wooded parts of Tunis. It appears to be a resident in the Eastern Atlas, as we obtained several nests near Souk Harras.

62. *TURDUS MUSIEUS.* (Thrush.)

Common all over the plains about Tunis in February.

63. *MONTICOLA SAXATILIS.* (Common Rock-Thrush.)

This Rock-Thrush does not appear to be nearly so common as the Blue Rock-Thrush in the districts we visited; indeed, except on one occasion, at Kef Laks, I have no instance noted of having met with it.

64. *MONTICOLA CYANEA.* (Blue Rock-Thrush.)

In all the mountainous parts and rocky passes, the Blue Rock-Thrush occurs; and in such places one may seldom listen in vain for the plaintive notes of this beautiful songster. We were unsuccessful in obtaining their eggs, though many pairs must have had their nests within easy reach of our different camps while we remained in the mountains.

65. *IXOS OBSCURUS.* (Dusky Bulbul.)

I shot a pair of these birds near Kef Laks. I found them near the bank of a small wooded stream that runs in the valley on the south side of the plateau. My attention was first attracted by the rich song of the male bird; and after waiting a short time, I succeeded in obtaining both it and the female.

66. *MUSCICAPA LUCTUOSA.* (Pied Flycatcher.)

This bird is not uncommon about Souk Harras, but is more rare in the Salt-lake districts.

67. LANIUS MERIDIONALIS. (Great Grey Shrike.)

This Shrike seems confined in its range to the northern slope of the Atlas, whilst its place is occupied in Tunis and on the southern watershed by *L. algeriensis*. I found a nest at Foun el Hameer, on the borders of Guerah el Tharf, and endeavoured to obtain the bird, but did not succeed; however, as I was pursuing it, I was enabled to see that it was this, and not the next nearly allied species.

68. LANIUS ALGERIENSIS. (Algerian Grey Shrike.)

I frequently met with this bird in Tunis, at Sousa, and other parts of the Regency, but lost sight of it on ascending the Atlas range.

69. LANIUS RUFUS. (Woodehat Shrike.)

Is everywhere abundant in Eastern Algeria and Tunis. It breeds in great numbers on the hill-sides in the neighbourhood of Djendeli, making a nest composed almost entirely of one material, viz. a small grey flower, which the bird collects with the stalk, and entwines into its nest, employing the same for the lining. The whole structure is beautifully neat and compact.

70. GARRULUS CERVICALIS. (Algerian Jay.)

I saw this bird on several occasions near Souk Harras, but lost sight of it on passing to the less-wooded country.

71. PICA MAURITANICA. (Moorish Magpie.)

This Magpie is common in the Eastern Atlas; we found it breeding at Djendeli, where it frequented the wooded hills, and built in the Terebinth trees. The eggs are laid about the third week in May, but some earlier, as young birds were brought to us before the end of that month.

72. CORVUS CORAX. (Raven.)

The Raven we found abundant everywhere. It was no uncommon sight to see twenty or thirty birds at one time. They build in every available cliff. All the eggs of *C. corax* from this district are remarkably small in size.

73. CORVUS MONEDULA. (Jaekdaw.)

Common in many parts, especially about the eave at Djebel Dekma.

74. PYRRHOCORAX GRACULUS. (Chough.)

About the hills that surround the plain that holds the marsh of Zana, I not unfrequently used to observe the Chough. While we were staying there, a Frenchman shot one, which proved to be this species, and not *P. alpinus*.

75. STURNUS UNICOLOR. (Sardinian Starling.)

I have no note respecting the Common Starling; but as it is said to occur commonly at Tunis during the winter, I, doubtless, omitted to remark it. The present bird I saw at Kef in the Regency of Tunis, subsequently at Djebel Dekma, and lastly at Zana.

76. COCCOTHRAUSTES VULGARIS. (Hawfinch.)

On one occasion, about the middle of May, I saw a pair of Hawfinches among the Tamarisk-trees that grow near the spring of Aïn Djendeli.

77. FRINGILLA SPODIOGENA. (Algerian Chaffinch.)

This bird is common about Tunis; but we lost sight of it on moving westward.

78. SERINUS MERIDIONALIS. (Serine Fineli.)

Common about the olive-groves near Sousa and other parts of Tunis, but decidedly rare in the mountainous and more elevated parts.

79. CARDUELIS ELEGANS. (Goldfinch.)

Common everywhere. At Djendeli this bird builds a neat nest, composed almost entirely of the flower of the Tamarisk.

80. CHLORIS AURANTIIVENTRIS*. (North-Afriean Greenfinch.)

Though this bird is represented as common in many parts of the country, I saw but little of it. I shot one near Souk Harras; and afterwards we obtained a few nests near Djendeli. The bird appears to be justly entitled to a specific appellation, as being distinct from the common Greenfinch (*Fringilla chloris*.)

81. LINARIA CANNABINA. (Linnet.)

I met with large flocks of this bird near Carthage, in February.

* *Ligurinus aurantiiventris*, Cab. Mus. Hein. p. 158?; *Chlorospiza chloris*, ex Algeria, auct.—(Ed.)

82. PASSER SALICICOLA. (Spanish Sparrow.)

Is found in great numbers during the breeding-season among the Tamarisk thickets on the Chemora, and in the high sedge at Zana. The Arabs destroy the nests, eggs, and young, wherever they find them, as their great numbers do much damage to the crops of corn. The nests are placed as thickly as they can stand—the whole colony consisting of perhaps one hundred pairs, occupying only five or six trees. The noise and ceaseless chattering proceeding from one of these “sparrow towns” can easily be imagined ; and, guided by the sound alone, one may walk directly to the spot from a considerable distance. One Sunday morning, four Arabs came to our tents, and, gravely sitting down in a row, opened the hoods of their burnouses, and displayed 800 or 1000 sparrows’ eggs, which they arranged in four heaps before them, and remained in their sitting posture contemplating them with evident satisfaction. We were rather taken by surprise, but selected the best for our collections, reserving the rest for omelettes.

83. EMBERIZA CIRLUS. (Cirl Bunting.)

I frequently saw the Cirl Bunting at Khisan M’sakta and its neighbourhood. We afterwards, in May, obtained nests.

84. EMBERIZA MILITARIA. (Common Bunting.)

Everywhere very abundant.

85. ALAUDA ARVENSIS. (Skylark.)

The Skylark is very common about Tunis in February ; but it occurs rarely in the Salt-lake country, the head-quarters of *A. calandra*, *cristata*, and *brachydactyla*.

86. GALERIDA CRISTATA. (Crested Lark.)

Is abundant in all the plains both in Tunis and the Salt-lake country. In the latter districts we found it breeding in the month of May, but some eggs were obtained in April. Though the plains appear to be most frequented, it was by no means of unusual occurrence to find the Crested Lark in the mountains and rocky passes, in this respect differing from *A. calandra* and *brachydactyla*, both of which we found exclusively in the level country.

87. CALANDRELLA BRACHYDACTYLA. (Short-toed Lark.)

This lark is much more local in its distribution than the last—its range being confined to a few favoured spots in the elevated plains. About Aïn Beïda it is abundant, and throughout the great plain of El Tharf it may be commonly met with; in the neighbourhood of Djendcli it also occurs. Like the rest of its congeners, it places its nest on the sheltered side of a bush,—the scrubby vegetation which clothes the whole of that arid district affording the necessary protection for its offspring. The eggs of this species vary very much; even in the same nest hardly two similar ones are to be found. So different were some of the varieties, that the greatest care was necessary in identifying their true parentage.

88. MELANOCORYPHA CALANDRA. (Calandra Lark.)

The large size of the Calandra makes it conspicuous among its congeners in places where the other species are found. It seeks the pastures and corn-fields more than the above-mentioned species, though in some places all three are found together in equal abundance. The number of eggs varies from three to five; they are laid about the second week in May, but some earlier.

89. LOXIA CURVIROSTRA. (Crossbill.)

On the 26th of March, we met with the Crossbill half a day's journey westward of Kef, on a ridge of the mountains covered with pine-trees. There were five or six of them, consisting of two parent birds with their young just out of the nest.

90. PICUS NUMIDICUS. (Numidian Woodpecker.)

I shot one of these birds in a tree that overhangs a small marabout that stands on the north side of the eastern precipice of Djebel Dekma.

91. GECINUS LEVAILLANTII. (Levaillant's Woodpecker.)

This close ally, but well-defined representative of our common Green Woodpecker (*Gecinus viridis*) is not uncommon in districts where there are large trees. I met with it on several occasions; and a nest of seven eggs, with the old bird, was brought to us by an Arab. These eggs appear, on comparison, decidedly smaller than those of our familiar species.

92. CUCULUS CANORUS. (Cuckoo.)

In the Waregra country, near Sidi Youssef, towards the end of March I saw several Cuckoos, one of which I shot. I have no recollection of having either met with it or seen it subsequently.

93. OXYLOPHUS GLANDARIUS. (Great Spotted Cuckoo.)

Mr. Hewitson, quoting Mr. Tristram, has given an account of the breeding of this bird (*vide* 'Ibis,' vol. i. p. 76), to which a few additional remarks of my own may not be here out of place. I was unfortunately the one of the party that saw least of this bird; therefore I can only add a little information as to the manner in which our eggs were obtained, and, I am sorry to say, nothing to the general habits of the bird. I first observed it in the Waregra country, near the Tunisian frontier, after which we lost sight of it till the middle of May, when our attention was drawn to the fact of its existence in the neighbourhood in which we were then located, by the information brought by Mr. Tristram from Batna. On the morning of the 20th of May, an Arab brought us two eggs which corresponded so well with the egg Mr. Tristram had previously obtained, that our expectations were raised to the highest pitch. A few hours after, another egg was brought from another quarter; and in the evening of the same day, four more. With none of these eggs were any of the *Pica mauritanica*. On blowing them, the first two proved to be about half-incubated, and the zygodactylie structure of foot was clearly visible; the others were fresh. I may add, that on taking each of the Arabs to my box of skins, each separately selected a Common Cuckoo, and showed wherein the Great Spotted Cuckoo differed. There was no skin of *O. glandarius* in the box. On the 20th of May, therefore, we had no doubt that we had the eggs of this Cuckoo. On May 25th, Mr. Simpson was taken, by an Arab who had been in the habit of collecting for us, and who lived in a camp not far from ours, to a nest, in which he found three eggs corresponding exactly to those we had previously obtained. Mr. Simpson did not see the birds near, and at the time supposed, from the fact of the nest being so close to the Arab tents, that the eggs had been put there by the man who showed it to him,

in order that he might more easily watch that no other Arab took the eggs and deprived him of the reward we had offered. Mr. Simpson, on reconsidering the facts of the case, is now of opinion that the eggs had been deposited by the bird herself. The nest in which these eggs were placed was described as an old one, and as probably one of a Magpie (*Pica mauritanica*). The next nest obtained was on May 30th, and was that taken by Mr. Tristram, as related in the paper referred to above. Two other eggs were brought to us on another occasion. Returning again to the different nests above mentioned, it would appear that on no occasion did we find other eggs with those of the Cuckoo, and that certainly on two occasions more than one egg was found in the nest, viz. in the nest taken by Mr. Simpson, and in that taken by Mr. Tristram. Again, there is a probability, from the fact of the two eggs first brought being equally incubated, that they were from the same nest; and it is also presumable that the four eggs brought on the same day were from the same nest, as two of them showed marks of imperfect formation in the shell, one more than the other, indicating the order in which they had been laid. The circumstance of Mr. Tristram finding two of the eggs of this bird marked as *Pica mauritanica*, and two others, really Magpies, similarly marked, after all proves nothing. They were not taken by any of us, else they would have been so noted, but were brought to our tents by some Arab; and it is as likely that he took them from two, three, or four nests, as from one. Further evidence than an Arab's bare statement we usually deemed necessary to determine whether the eggs brought to us were from one or more nests. I believe it is contrary to our experience of parasitic Cuckoos to find nests occupied by eggs, certainly of a Cuckoo, more than one in number, and they the only eggs in the nest*. I am not disposed to throw any doubt upon M. Brehm's statements respecting the habits of this bird. I have not his paper, and I am sorry to say it is now inaccessible to me; but, if I recollect rightly, he follows the bird through the whole of the breeding-season, and had on many

* In writing to me respecting an egg of the *Chrysococcyx lucidus* of Australia, Mr. W. Bridger says that it was incubated while the eggs of *Acanthiza chrysorrhoa*, in the nest of which he found it, were fresh, showing that the egg of a parasitic Cuckoo may be the first deposited in a nest.

occasions seen the young Cuckoo with the young of its foster-parents in the same nest. We only obtained the eggs in the manner I have stated, and unfortunately left their haunts before the young were hatched; our work therefore was left imperfect, and it remains the enviable task of some enterprising naturalist to unfold the mystery that still hangs over the breeding-habits of this bird. For his guidanee, whoever he may be, let me add that the wooded hills on the south side of Lake Djendeli, and in the neighbourhood of the Madracen, both which districts lie a little to the eastward of the high-road between Constantine and Batna, may be considered as favoured breeding localities of *Oxylophus glandarius*. I have refrained from suggesting any probable hypothesis which might clear up the difficulty, as I feel sure that before long we shall arrive at the facts of the case, and any false supposition might tend to error.

94. COLUMBA PALUMBUS. (Ring Dove.)

This Pigeon, which Mr. Gould assures me differs in no way from our common Ring Dove, is abundant in many parts, and breeds in the month of May.

95. COLUMBA LIVIA. (Rock Dove.)

Occurs in great numbers in the Cave of Djebel Dekma, and in other suitable rocks of that district.

96. TURTUR AURITUS. (Turtle Dove.)

Common about Djendeli, where it breeds.

97. TURTUR ÆGYPTIACUS. (Egyptian Turtle Dove.)

In the Regency of Tunis I observed this bird in many places. It is found usually about the towns, and frequents the ruined Amphitheatre of El Djem. I never saw it in Eastern Algeria.

[To be continued.]

XXXI.—Recent Ornithological Publications.

1. ENGLISH PUBLICATIONS.

THE fourth and concluding part of the 'Illustrated Proceedings of the Zoological Society' for 1858, which was published last month, contains numerous papers on Ornithology, and the plates attached are of the usual excellence;—how can Mr. Wolf's

121. STERNA, sp.

122. STERNA MINUTA.

In summer on the Red Sea, in small flocks from 3-6 birds.
Dighés, Arab.

123. STERNA SENECAE, Sw.

In large flocks south of the tropic. Breeds socially on coral islands in July, August, and September. *Abu-batén*, Arab.

124. STERNA MERIDIONALIS, Br.

Near Massaua.

125. ANOUS TENUIROSTRIS.

Single individuals on the whole Red Sea. On my last voyage only south of 14° N.L., from the end of September. In countless numbers in the Gulf of Aden, where it breeds in the height of summer on the island of Bur-da-Rebschi ; we could easily catch them with our hands. Length to the end of wing 14" 13" ; wing 9" 6" ; tarsus 10". Gullet pale-yellow ; interdigital membranes dark yellowish-earneous.

126. PHAËTON AETHEREUS.

Singly or in small flocks of from three to six on the Dahalak Isles, near Amphila, Ras Belul, Aden, and about Bur-da-Rebschi. Manners and voice much like *Sterna caspia*. Appears to copulate while swimming, in the month of August.

127. DYSPORUS SULA. (L.)

On the whole Red Sea, alone and in flocks.—*El Smet*, Arab.

128. SULA MELANOPS, Hartl., n. sp. (Plate X. fig. 2.)

Mas ad. : Alba, subflavescens ; remigibus, seapularibus teetrii-
busque alarum extimis et reetrieibus nigris, omnibus ad basin
albidis vel pure albis ; seapis infra albis ; flexura alae alba ;
rostro virescenti-flavo, basi nigro ; periophthalmiis et mem-
brana gulari rotundato-truncata nigris ; iride rubescenti-
flava ; pedibus cærulecenti-plumbeis, membranis obseurio-
ribus, unguibus corneo-nigris, ad apieem albidis ; digitii
medii margine serrato toto albo. Long. 27-28" ; rostr. a
rict. 4" 6" ; rostr. a fr. 3" 9" ; al. 16-16 $\frac{3}{4}$ " ; eaud. 8" ; tars.
2" ; dig. med. e. ung. 3" 10"-3" 11". *Jun.* : Capite, collo et
corpo supra fuliginosis ; fascia nuchali pallidiore parum
conspicua ; plumis dorsi ad apieem et ad basin albidis ; sub-

alaribus albo brunneoque variegatis; remigibus et cauda fuso-nigris; corpore inferiore reliquo albo-flaveseente; iride brunneo-flava; rostro magis virecente.

Only about Bur-da-Rebschi or Djebel-tiar, a guano island, five miles distant from the Somali coast near Mēd, where we observed six or eight pairs; probably also on Abd-el-Kuri and the cliffs of Cokotora. In November I found fledged young on Burda-Rebschi. The flight of the adult bird is waving, Albatross-like, and not so rapid as that of *Sula fusca* or the Cormorants. The young birds are stupid and easy to be caught by the hand. They seem to feed solely upon fishes. Not difficult to tame.

[If not *Sula cyanops* of Sundeval, this species is new! But Sundeval calls the face and naked throat simply *blue*, the iris "*flavissima*," the beak *blue*, olivaceous at the tip, the feet "*olive*"!! The *Sula capensis* is altogether a larger bird, and quite different in the *elongate* form of the gular membrane, which runs down the fore-neck in a narrow line. The *Sula dactylatra* of Lesson, which I have never seen in any collection, had the feet *yellow*. —ED.]

129. PELECANUS RUFESCENS.

Not rare south of the Tropic, in the Red Sea and Gulf of Aden. Very frequent near Massaua and Amphila. *Abu-djirab*, Arab.

130. PHALACROCORAX, sp.

A flock at the end of November near Bender Gam (Somali).

XXXIV.—*Five months' Birds'-nesting in the Eastern Atlas.* By OSBERT SALVIN, B.A., CORR. MEMB. ZOOL. SOE. (PART III.)

[Concluded from page 318.]

98. PTEROCLES ALCHATA. (Pin-tailed Sand Grouse.)

The extensive sandy plains termed the Harakta, of which El Tharf is one of the largest, are the only localities in which we met with this Sand Grouse. Like the following species, it makes no nest, but scrapes a slight hollow in the sand, in which it deposits its three eggs. These are laid in May, the young being hatched about the second week in June. The only species of *Pterocles* which occur in these elevated districts are

P. alchata and *P. arenarius*: further to the southward others are found.

99. PTEROCLES ARENARIUS. (Sand Grouse.)

Is found in the same localities as the last-mentioned species, but it also occurs about Djendeli and the Madraceen, where I never met with *P. alchata*.

100. CACCABIS PETROSA. (Barbary Partridge.)

The Barbary Partridge is very abundant in all the country we visited, especially in the Regeney of Tunis. It lays its eggs about the beginning of April, from eleven to fifteen forming the usual complement. It is known to the Arabs as "*El Hadjel*."

101. TURNIX COTURNIX. (Quail.)

Vast numbers of Quails are said to occur along the eastern coast of Tunis, and in the adjacent islands, during the period of the spring migration in April. A few remain to breed, and they may be met with in scattered pairs all over the country.

102. OTIS TETRAX. (Little Bustard.)

Throughout the extensive plains of Tunis the Little Bustard seems generally and plentifully distributed. In the Eastern Atlas its favourite resorts are the Arab corn-fields and grassy pastures; and it appears to seek rather than avoid cultivation, in this respect widely differing in taste from its congeners, *O. tarda* and *Houbara undulata*. The eggs of this species are laid about the middle of May, but some birds defer the period of incubation till June, as we obtained eggs as late as the 27th of the latter month. The nest was usually found in a corn field. One shown me by an Arab near Aïn Djendeli was so situated. It consisted merely of a little dry grass placed in a slight hollow in the ground. There were two eggs in this nest when it was shown to me. While I was endeavouring to make the Arab comprehend that if unmolested the bird would lay more, he destroyed the nest with a stick in his hand, but fortunately did not injure the eggs. Three or four seems to be the usual complement of eggs laid by one bird.

103. HOUBARA UNDULATA. (Houbara Bustard.)

We only meet with the Houbara in the Harakta country near

Guerah cl Tharf. As this country was worked by Mr. Simpson while I was at Djendeli and Zana, I have nothing noted of the habits of this bird, as I did not see it when passing through that district.

104. CEDICNEMUS CREPITANS. (Stone Curlew.)

This bird was our constant companion while encamped in the lake districts. We seldom used to see it during the day, but towards evening and after sundown the cries of several individuals resounded incessantly round our tents.

105. CURSORIUS GALLICUS. (Cream-coloured Courser.)

It was not until the end of June that I met with this bird. We had just broken up our final camp at Zana, and were returning by way of the Caravanserai of Aïn Yacoute to Constantine, when, at a short distance from the former place, we encountered a small flock in one of the undulating and sterile plains through which the high road to Batna and Biskra runs. The birds showed little symptoms of fear, and ran before our horses, or flew round our heads. At the time we thought they were not breeding there, but, as they were all in full adult plumage, I have since considered that they were there for no other purpose. The fact was, our faces were set homewards, and it was difficult to stop, even for the eggs of the Cream-coloured Courser. Mr. Tristram kindly gave me one of the eggs obtained by him, as mentioned in *The Ibis*, Vol. I. page 79; and, comparing this with Mr. Gurney's and Mr. Newton's examples from Tangiers, I may remark that, as regards my own specimen, the intensity of colour is decidedly in favour of the latter; and I attribute this inferiority to the effect of exposure, which in the parching climate of Southern Algeria is fatal to the colour of eggs.

106. GLAREOLA PRATINCOLA. (Pratineole.)

The Pratineole was found in the table lands of the interior, frequenting the salt lakes and freshwater marshes. Its fearless manner and familiar habits cause it to rank high among the interesting birds of the country; and I remember few that I have watched with greater pleasure. When in proximity to their nests, the whole flock come wheeling and screaming round, while some

dart passionately down to within a few feet of the intruder's head, retiring again to make another descent. When the first transports of excitement are over, they all alight one by one on the ground. Some stand quite still, watching with inquiring gaze; while others stretch themselves out, first expanding one wing, then the other, and sitting down extend both legs. In this position they remain some seconds as if dead, when, suddenly springing up, they make another circuit over head, and the whole flock passes quietly away. The bird makes no nest, but deposits its three eggs in a slight depression of the bare sand. The eggs are usually placed with their axes parallel. We several times visited places where numbers of these birds were breeding; yet we never succeeded in finding a young one, though many of the eggs were on the point of being hatched. This fact certainly favours the idea that on leaving the egg the young are capable of running like those of other *Grallæ*.

107. *CHARADRIUS PLUVIALIS*. (Golden Plover.)

I several times saw flocks of Golden Plover near the city of Tunis in February and the beginning of March.

108. *ÆGIALITES CANTIACUS*. (Kentish Plover.)

Occurs in abundance along the shores of the large lagoon of El Baheira which lies between Tunis and La Goletta. We afterwards found it breeding on the borders of most of the salt lakes in the interior.

109. *ÆGIALITES MINOR*. (Little Ringed Plover.)

In the neighbourhood of the marsh of Zana, we more than once met with this bird, but were unsuccessful in obtaining its eggs.

110. *GRUS CINEREA*. (Crane.)

The Crane is found in Tunis in great numbers during the winter months, frequenting the large plains. On one occasion, between Tunis and Oudena, I counted 108 of these birds on the wing at once. They are said to be migratory, and probably they seek their breeding haunts in the continent of Europe.

111. *ANTHROPOIDES VIRGO* (Demoiselle Crane).

Towards the eastern extremity of the marsh of Zana I several

times saw a small flock. We arrived there too late to obtain their eggs.

112. HERODIAS GARZETTA (Little Egret).

The marsh of Zana, which I have occasionally mentioned above, is one of those places where the Waders and Ducks seem to delight in congregating; and, as the swampy ground is of very limited extent, few spots furnish a richer feast to the eye of a devotee to the science of Ornithology. Our tents were pitched close to the springs at the western end of the lake, not far from the Marabout of Sidi el Hadj ben Ameer, an inimposing edifice erected to the memory of a saint of peculiar sanctity, but then tenanted only by a pair of Storks (*Ciconia alba*) and their young brood. My favourite walk in the morning was to take a circuit of the marsh. Starting at break of day, the first sound that assailed my ears was the harsh note of *Sylvia turdoides*—a small patch of reeds, not 60 yards from our tents, being occupied by a pair of these ceaseless chatters. Attention would next be called to the Storks on the Marabout, which, on any one approaching, would make their young crouch down in their nest, while they, standing over, would assume an expression calculated to lead one to suppose that they were perfectly innocent of the existence of the young brood at their feet. As I walk on a few yards further to escape the din of a noisy colony of Spanish Sparrows (*Passer salicicola*), and stand still, the morning air bears from the neighbouring reeds the soft rattling note of Savi's Warbler (*Locustella savii*) to my ears, and I see the little songster perched on the extremity of the tallest reed, pouring forth its peculiar song, which, now swelling, now softening, has given to the bird the title of a ventriloquist. A few yards further, and the Pratincole (*Glareola pratincola*) attract my attention by their incessant cries and furious attacks, as if resenting my intrusion in their domain. Among them may be a few Stilts (*Himantopus melanopterus*), which, after making a circuit overhead, alight close to a small pool of water. In this are seen some Shovellers and White-eyed Ducks (*Spatula clypeata* and *Nyroca leucophthalma*), which allow me to survey them with my telescope, but on closer inspection betake them-

selves to the reeds. As I turn now along the northern side of the marsh, I hear the Water Hen and Water Rail (*Gallinula chloropus* and *Rallus aquaticus*) harshly calling, while now and then a Wild Duck (*Anas boschas*) or Pochard (*Fuligula ferina*) flies out, and, wheeling round, returns. Here too an occasional Squacco Heron (*Buphus ralloides*) or Sandpiper (*Totanus glareola?*) rises; and passing suddenly a corner of the reeds, a startled Purple Water Hen (*Porphyrio hyacinthinus*) makes all possible haste to gain the denser cover. Leaving the tall reeds, and plunging knee-deep into water and mud, I now come upon the main body of Squacco Herons, and here and there a Bittern (*Botaurus stellaris*); here too may be seen the active little Baillon's Crake (*Crex baillonii*), allowing one but a momentary glimpse as it passes into the sedge. In the more open part, further to the eastward, Stilts occur in great abundance; and I never miss an opportunity of watching the ease and grace with which they manage their apparently unwieldy legs. As their nests are near, these birds make the air resound with their harsh, discordant cries. Near the Stilts I usually see an Avocet (*Recurvirostra avocetta*) or two stalking quietly about the marsh in search of food. Here, too, most of the ducks are to be seen; and 200 or 300 yards lower down, troops of Ruddy Shielddrake (*Casarca rutila*), and with them a small flock of Demoiselle Cranes (*Anthropoides virgo*). These last wend their way eastward to Chot Saboun, and I see them no more. Returning by the south side of the marsh along the water's edge, I find the Kentish Plover, and occasionally a Little Ringed Plover (*Egialites cantiacus* and *E. minor*); while in the short reeds stand a row of Buff-backed Herons (*Herodias russata*), contrasting strangely in their sluggish movements with the active Little Egrets (*Herodias garzetta*), some five or six of which may be feeding near with a Glossy Ibis (*Ibis falcinellus*), the "Devil Heron" in their company. The Buff-backs wake up as I approach, and fly away to the Roman ruins close by, there to bask again, standing, some on the overturned stones, some on the decorated arches, two of which still stand at the northern extremity of the old city. The pools on the south side are full of Coots (*Fulica atra*), and here and there a White-headed

Duck (*Erismatura mersa*) ; and here, too, it was that I used to see the greatest number of Red-crested Whistling Ducks (*Branta rufina*). A distant screaming warns me to watch the Gull-billed Terns (*Gelochelidon anglica*) as they come skimming the water, making for the freshly-cut grass-fields to seek their breakfast of beetles and grasshoppers. At every corner of the reeds I now startle up a Little Bittern (*Ardetta minuta*) ; and the Grey-headed Wagtail (*Budytes flava*) continually shows itself. Soaring over the Arab tents, if the dogs allow me to look up, I see Egyptian Vultures and Black Kites (*Neophron percnopterus* and *Milvus ater*), and nearer the cliffs a few Choughs and Alpine Swifts (*Pyrrhocorax graculus* and *Cypselus melba*). My walk is now terminated ; and, ready for breakfast, I usually find the tents beset by Arabs : most of them come to talk with our servants, but some with more profitable intent, bearing vegetables, cooscoos and corn. The boys bring eggs or information about nests—the object of another ramble.

Though we never obtained the eggs of the Little Egret, I am inclined to think it a much earlier breeder than either the Buff-backed or Squacco Herons, as a female I shot at Zana, on June 22nd, bore every appearance of having hatched its young—the moulting of the feathers having advanced considerably, and the eggs in the ovary being small.

113. BUPHUS BUBULCUS. (Buff-backed Heron.)

Though local, the Buff-backed Heron occurs abundantly where it is found. I first met with it near Bizerta and afterwards at Zana, at which latter place it was common, a large flock frequenting the marsh. We did not obtain any of their eggs, and to all appearance the birds had not entered upon their domestic duties when we left their haunts. Is the bird mentioned in Mr. E. C. Taylor's 'Ornithological Reminiscences of Egypt,' and called by him *Ardea russata* and *Ardea bubulcus*, Savigny, this bird, or its Indian representative * ? The eggs from Ceylon

* We believe that there is no doubt that the Egyptian bird is the true Buff-backed Heron—the same species which occurs in England. The Indian *Ardea coromanda*, Bodd., to which bird Temminck first applied the epithet *russata* (See Man. d'Orn. ed. 2. p. 566), is not separable, according to G. R. Gray, but is distinguished by Bonaparte (Consp. ii. p. 125).

are very different from those of this species collected by Mr. Tristram and Capt. Loche.

114. *BUPHUS RALLOIDES.* (Squacco Heron.)

Common in the marsh of Zana, but found in single birds or two or three together, rather than in flocks like the Buff-backed Herons.

115. *ARDETTA MINUTA.* (Little Bittern.)

I only met with this bird in the marsh of Zana, where it is extremely common.

116. *BOTAURUS STELLARIS.* (Bittern.)

A few pairs of Bitterns frequented the marsh of Zana. As far as we could ascertain, they had laid their eggs and hatched their young before we had arrived there.

117. *NYCTICORAX GRISEUS.* (Night Heron.)

I only observed this bird on the lake of Bizerta, where we found a few sitting about the fence-work made for stopping the fish.

118. *CICONIA ALBA.* (White Stork.)

Abundant at Bona and the old towns in the Regency of Tunis.

119. *IBIS FALCINELLUS.* (Glossy Ibis.)

I several times saw a Glossy Ibis accompanying a small flock of Little Egrets at Zana. It would appear, from Mr. Tristram's account of them at Lake Halloula, always to show this partiality for Herons, but not to be constant in its attention to one species.

120. *NUMENIUS TENUIROSTRIS.* (Slender-billed Curlew.)

In the Regency of Tunis, on more than one occasion, I saw a flock of these Curlews, and, on an undulating plain near El Djan, succeeded in shooting one.

121. *TOTANUS OCHROPOUS.* (Green Sandpiper.)

While searching for snipe in a small marsh near Sousa, Mr. Simpson shot one of these birds.

122. *TOTANUS CALIDRIS.* (Redshank.)

Observed in the same marsh.

123. *RECURVIROSTRA AVOCETTA.* (Avocet.)

We only saw the Avocet at Zana and Djendeli, though we did

not until afterwards recognize the birds seen at the latter place as belonging to this species, which they undoubtedly did. At Chot Saboun, the eastern extremity of the marsh of Zana, the bird was most numerous. I myself only saw an occasional bird near our camp at Zana, Chot Saboun involving a longer ride than I could take without an attack of the climatic fever under which I suffered during the last three months of my stay.

124. *HIMANTOPUS MELANOPTERUS*. (Black-winged Stilt.)

Abundant at Zana, a few pairs occurring at Djendeli and Guerah el Tharf. Over the whole of the lower end of the marsh of Zana and Chot Saboun the Stilt breeds in great abundance amongst the wet grass, choosing for the position of its nest a small tuft, so as just to keep the eggs out of the water. Sometimes, however, this object is not attained, as we occasionally found nests in which the eggs were half immersed. The bird uses its long legs with much greater ease than might be expected; and its long, deliberate strides, as it stalks about in search of food, are far from being ungraceful. The only time they seem to be in its way is at the moment of taking flight, when they hang awkwardly down till the bird, being fairly started, stretches them out, extending them far beyond the tail. We used to search for the nests of this bird on horseback, and, on observing one sitting, to ride up without taking our eyes off the place. The bird would remain quiet till we were within thirty yards of the nest, when it would walk slowly away, till, aware of our purpose, it would rise and fly wheeling and screaming overhead. The young Stilt is able to walk almost immediately on leaving the egg; one we found was capable of moving about while the other three were struggling to free themselves from the shell. The nest is composed of a few bits of dead reed or grass. The complement of eggs laid by one bird is four.

125. *SCOLOPAX GALLINAGO*. (Common Snipe.)

Mr. Simpson and I found several Snipes in a small marsh near Sousa. I afterwards put one up at Zana, about the middle of June.

126. *RALLUS AQUATICUS*. (Water Rail.)

Common in the marshy ground of Zana and Djendeli.

127. *CREX BAILLONII*. (Baillon's Crake.)

This shy little bird we used to see occasionally at Zana, where we obtained one nest, which an Arab brought to our tents.

128. *PORPHYRIO HYACINTHINUS*. (Purple Water Hen.)

This magnificent species is common at Zana, where it keeps very much out of sight under the cover of the taller reeds. It is, I believe, in the habit of destroying the Ducks' nests whenever it can get an opportunity. Many a time did we leave a nest for the satisfactory determination of the species to which it belonged, and return to find every egg broken and sucked out. It may be calumny to ascribe these depredations to *Porphyrio hyacinthinus*; but I strongly suspect the charge is not unfounded. The eggs are so much taken by the Arabs that I can speak with no certainty of the usual complement laid by one bird.

129. *GALLINULA CHLOROPUS*. (Water Hen.)

Excessively common at Zana, judging from the number of eggs brought to us by the Arabs.

130. *FULICA ATRA*. (Coot.)

Also common at Zana, Djendeli, and Bizerta, in none of which places did I observe the Crested Coot (*Fulica cristata*).

131. *PHœNICOPTERUS ANTIQUORUM*. (Flamingo.)

It seems to be an almost universal rule throughout the world, that where there are salt lakes, there Flamingos are found*. It certainly is the case in Tunis, and the province of Constantine in Eastern Algeria; no permanent salt lake of any extent is without them. Every one who has visited Tunis must remember the vast numbers that are to be seen in the lagoon of El Baheira and the lake on the north western side of the town, and will recall to mind the magnificent sight of a thousand or more of these beautiful birds rising from the water at one time, the

* Mr. Darwin ('Naturalist's Voyage,' new ed. page 66) states that he found Flamingos in Patagonia, Northern Chili, and the Galapagos Islands, frequenting the salt lakes. They are also found in the salt lakes of Siberia. (See 'Pallas's Travels, 1793 to 1794,' pp. 129-134.) The whole physical features of the Eastern Atlas range suggest the idea of its recent elevation above the sea-level; and I would include the upheaval of this portion with that of the Sahara, as conjectured by Mr. Tristram. (Ibis, vol. i. p. 155.)

whole mass, from the colour on their expanded wings, looking like an animated rosy cloud. They are extremely difficult of approach; and I only succeeded in shooting one, which proved to be a splendid male. On dissecting this bird, I found in the gizzard nothing but the vegetable matter that grows at the bottom of these lagoons; I am therefore led to suppose that this forms the principal part of its food, and not the worms which burrow in the mud, as Mr. Darwin suggests. ('Naturalist's Voyage,' new ed. page 66.) We found the bird equally abundant at Djendeli throughout the month of May, but obtained no certain clue to its breeding localities or nesting habits: the Arabs could tell us nothing, and we were unable to discover anything ourselves.

132. *CASARCA RUTILA*. (Ruddy Shielddrake.)

Though this bird is numerous in all the salt lakes of the elevated plains, its egg is one of the most difficult to obtain. One nest only rewarded our labours. The rarity of the eggs is hardly so surprising, when the situation chosen by this bird for its nest is considered. It selects a hole or crevice of a cliff for its breeding place, and associates with the Raven, the Black Kite, and Egyptian Vulture during the period of the reproduction of its young. Almost immediately on encamping at Aïn Djendeli we used daily to see a pair of Ruddy Shieldrakes pass over our tents, their direction always being backwards and forwards between the cliffs to the south of us and the small, marsh between us and the lake. After careful investigation, the nest was discovered to be in a hole in the face of a rock, which required all the skill of Mohamed and all our appliances of ropes, &c. to reach. The result was four hard-set eggs, which are now in the collections of Messrs. Tristram, Simpson, J. Wolley, and myself. Though the Arabs were aware of the habits of this bird, we did not succeed in obtaining any more eggs. It is probable, from its name, that the Mountain Goose (*Casarca cana*) of South Africa has similar habits. These facts suggest the interesting question as to how and when the young, when hatched, are conveyed from their aerial home to their natural element, upon which I regret to say I can throw no satisfactory light.

133. *ANAS BOSCHAS.* (Wild Duck.)

Common at Zana.

134. *CHAULELASMUS STREPERUS.* (Gadwall.)

Also common at Zana.

135. *PTEROCYANEA CIRCIA.* (Garganey.)

I shot a Gargany in the Medjerdah just below Djebel Dekma during the first week in April.

136. *SPATULA CLYPEATA.* (Shoveler.)

In a small open pool of water to the northward of the Marabout of Sidi el Hadj ben Ameer at Zana, I used generally to see a pair of this Duck. It did not seem a common bird in the marsh.

137. *BRANTA RUFINA.* (Red-crested Whistling Duck.)

In the open pools at the upper end of the marsh of Zana, I used frequently to see several pairs of the Red-crested Duck. Two nests only were obtained. The second lot, consisting of seven eggs, were of a most brilliant fresh-green colour when unblown; the contents were no sooner expelled, and the egg dry, than the delicate tints were gone, and their beauty sadly diminished.

138. *FULIGULA CRISTATA.* (Tufted Duck.)

Abundant in the lake of Bizerta in March.

139. *FULIGULA FERINA.* (Poehard.)

Very abundant during the winter months in the lagoon of El Baheira. At Zana it was far from uncommon, but we were not fortunate in obtaining their eggs with certainty. The Arabs of the encampments surrounding the marsh ransack the whole of it for the eggs of the birds that breed there, those of the Ducks being their special object of search. The consequence was, we were unable to induce them to leave a nest, when found, in order that by showing it to us, we might, by seeing the bird, identify the species. It was, after all, giving up certainty for uncertainty on the part of the finder; for if we refused to buy the eggs, he still had them to eat; while, if he left them, another Arab was almost sure to take them. We had not much better fortune with some French mowers, who were there making hay for a

detachment of cavalry; for they found the Dueks' nests by cutting the grass over them, and desertion on the part of the bird infallibly ensued if the eggs were left.

140. **NYROCA LEUCOPHTHALMA.** (White-eyed Duck.)

This bird also breeds at Zana and Djendeli. We were more fortunate in obtaining their eggs than those of the other species of Ducks. The Widgeon (*Mareca penelope*) is not found in either place, at least we never saw it; and so brilliant a bird as the cock could hardly have escaped observation; consequently the eggs from these districts may fairly be ascribed to this bird, as no other Duck in the country lays similar eggs.

141. **ERISMATURA MERSA.** (White-headed Duck.)

Is common in the lagoon of El Baheira. We afterwards saw it at Djendeli and Zana, but did not obtain its eggs.

142. **PODICEPS CRISTATUS.** (Great Crested Grebe.)

Occurs in the lagoon of El Baheira.

143. **PODICEPS AURITUS.** (Eared Grebe.)

Very common in the lagoon of El Baheira during the winter. I afterwards observed it in Lake Djendeli, but did not obtain any eggs.

144. **PODICEPS MINOR.** (Little Grebe.)

At Zana the Little Grebe is common, and breeds there.

145. **THALASSEUS CANTIACUS.** (Sandwich Tern.)

I shot a Sandwich Tern flying over the lagoon of El Baheira, and saw others.

146. **GELOCHELIDON ANGLICA.** (Gull-billed Tern.)

The representative of this species in the lagoons of Tunis and the lakes of the interior appears to differ immaterially from the true *G. anglica*, which extends its range into India. Mr. Gould, who has kindly compared my examples with his own, assures me that this is the case. At Zana we found it breeding, a considerable number frequenting the marsh. Numerous as the bird was, we only obtained five eggs; one other egg our servant Bilgarzoum broke, having wound it up in his turban by way of putting it in a safe place to take it to the tents. Of course, when he went to unfold it, it was hopelessly flat. No

reasonable doubt can exist regarding these eggs, as no other bird at Zana could possibly have laid them, but we did not take any ourselves. They build, probably, on some of the small mounds on the north side of the marsh, which stand like islands out of the swampy ground. The statement in Mr. Tristram's Sale Catalogue of 1858, describing their eggs as laid on the tops of the highest hills, was an idea we entertained at one time from a vague description, given by the Arab who brought us the first eggs, of the place where he found them. This idea we afterwards rejected as resting upon insufficient evidence. In fact we left Zana before these birds had begun to sit, and consequently were never able to determine the exact localities where they bred. These Terns feed over the grass fields and open land, hovering and descending, as our more familiar species do on the English coast over a shallow, their food being grass-hoppers and beetles, which there swarm, instead of sand-eels.

147. HYDROCHELIDON FISSIPES. (Black Tern.)

On one occasion I saw Black Terns skimming over the lake of Djendeli.

148. CARBO CORMORANUS. (Cormorant.)

Several Cormorants share with the Ospreys (*Pandion haliaetus*) the posts set up in the lagoon of El Baheira.

I regret that I have been able to give so imperfectly the Arabic names of the birds in the preceding pages. Much more complete information on this point will be found on referring to Capt. Loche's 'Catalogue des Mammifères et des Oiseaux observés en Algérie', published at Paris, 1 vol. 8vo.

XXXV.—*Observations on the Birds of St. Croix, West Indies, made, between February 20th and August 6th 1857 by ALFRED NEWTON, and between March 4th and September 28th 1858 by EDWARD NEWTON. (Part IV.)*

[Concluded from p. 264.]

(Plate XII.)

† 50. [?] — (?) FLAMINGO. *Phoenicopterus* — (?)

Large bands of some species of Flamingo—probably the *Ph.*

ruber of Linnæus—are said to have formerly visited St. Croix periodieally, and even of late years a few seem to have been occasionally observed: on the south side of the leeward end of St. Thomas, a large indentation still bears the name of Flamingo-pan Bay.

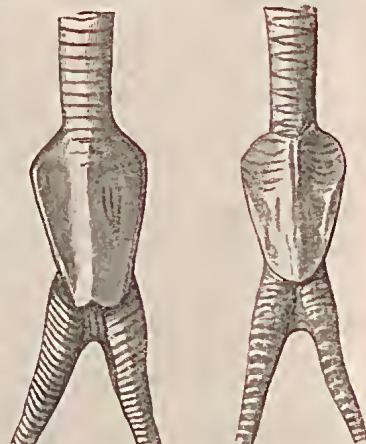
51. BLACK-BILLED WHISTLING DUCK. *Dendrocygna arborea*, Eyton. *Anas arborea*, L.: Edw. Birds, pl. 193; Pl. Enl. 804. "Mangrove Duck."

This speeies is pretty eommon on the Mangrove Lagoons, but much oftener heard than seen. The whistling noise it makes while flying eauses it to be well known by persons who have never even set their eyes on a speeimen; for it is chiefly at night that it quits its solitary haunts to feed. It probably breeds in the island; but we have no positive authority for saying that it does so, and we regret we eannot furnish more information respecting it.

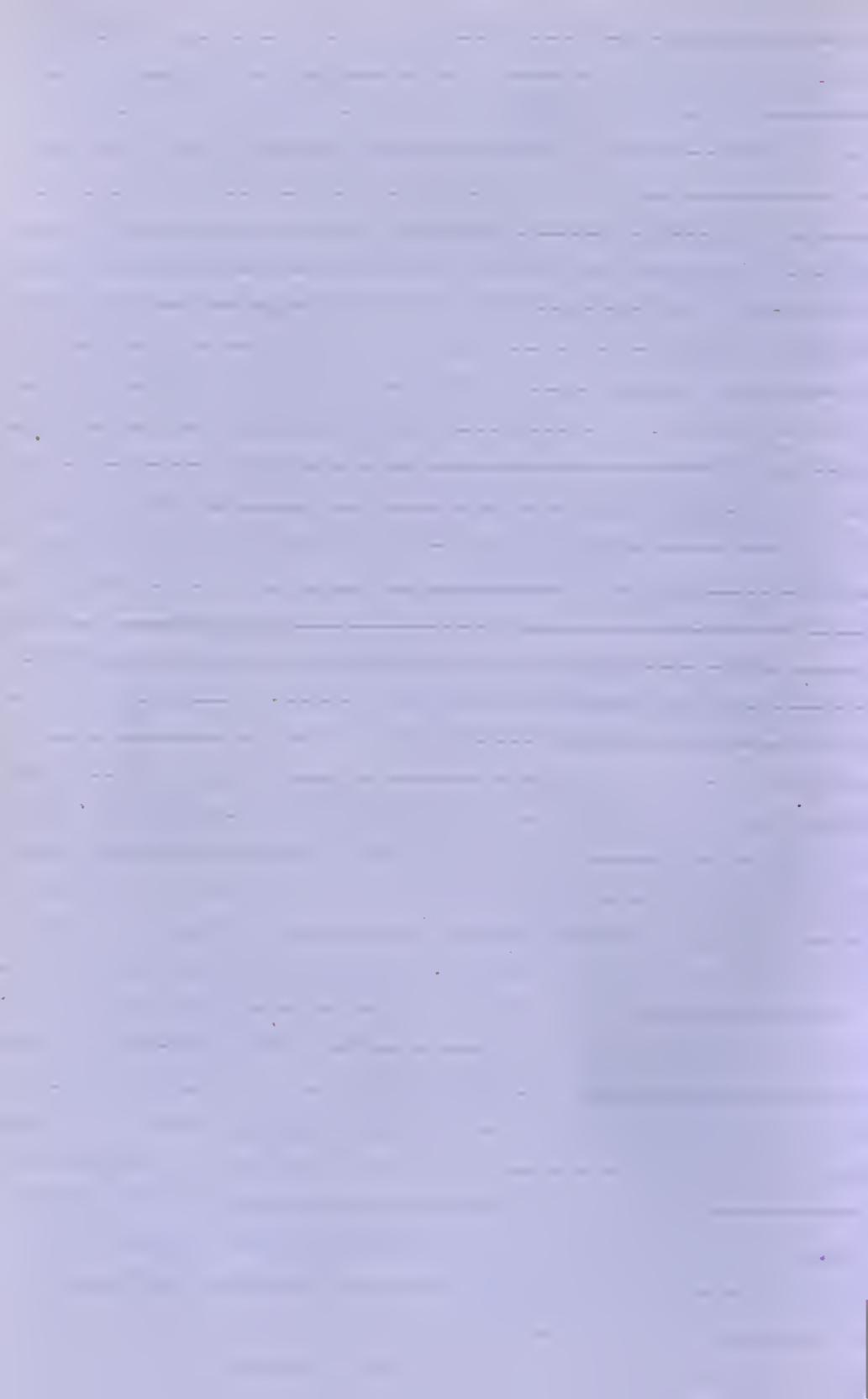
"I proeured speeimens of both sexes; and, as the traehea of no one member of the genus *Dendrocygna* has been figured, that I am aware of, I am glad to be able to give a representation of the organ in this speeies. The labyrinth, in form, may recall that of the Garganey (*Pterocyanæa circia*, Bp.), but is sufficiently different from it in many respects.

"I have not seen speeimens sufficient to be able to record the seasonal changes of plumage in this speeies. A male, killed July 21st, 1858, bore no sign whatever of moulting. In general appearance it greatly resembled a female obtained September 17th, 1858. The iris was brown, the bill black, legs dull ash-grey, the feet darker, and the elaws blaek."—E. N.

52. [?] AMERICAN SCAUP DUCK. *Fulix affinis*, Baird. *Anas marila*, Wils. pl. 69. fig. 3; *Fuligula affinis*, Eyton; *Anas marioïdes*, Vigors, nee Yarrell.























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